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THE
GLOBE
READERS
ILLUSTRATED

Book V

MACMILLAN & CO.

NOTE.

IN Book V. the lessons illustrate a considerable variety of good literary expression, both in prose and in verse. The matter is more miscellaneous than in the preceding books. The main expectation is to cultivate the observation of natural objects, and the feeling for Nature in diversified forms. There are passages descriptive of varied scenery, character, and conditions of life. The few lessons of a scientific cast are chiefly readings in Physical Geography and Geology. Besides containing useful knowledge, expressed in pleasant literary form, these readings are believed, so far as they go, to afford excellent and easy, though unpretending, examples of scientific method. Two or three simple lessons deal with important points in Political Economy. Two or three others record important historical events. And the feelings are touched to emulation as well as sympathy.

Spelling lists, explanatory notes, derivations, hints for exercises, &c., are still continued.

The illustrations form an interesting feature of the volume, equally pleasant and helpful.



THE GLOBE READERS.

BOOK V.

COMPILED AND EDITED BY

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MARKS.

THE system of marking pronunciation adopted here is borrowed from Professor Bain's *Higher English Grammar*. It is based on the original suggestions of Dr. Thomas Clark. It possesses the important advantage of indicating *accent* and *quality of vowel sound* together.

It is not intended that the pupils should be oppressed or distracted with much regular study of these marks. By careful attention to the cases that arise in the lessons, they will quickly and easily associate the marks and the sounds represented. An occasional reference to these explanations may be found quite sufficient.

(1) *á, é, i, ó, ú.* The *acute* mark (') placed over a vowel shows that the vowel is *long* and also *accented*. For example: *mán* is for "main," or "mane"; *mén* = "mean," or "mien"; *min* = "mine" (in any sense); *món* = "moan"; *mún* = "moon." Before the vowel *ú* the sound of "y" is often inserted; as, *tyún* = "tune."

(2) *à, è, ì, ò, ù.* The *grave* mark (") placed over a vowel shows that the vowel is *short* and also *accented*. For example: *màn* = "man"; *mén* = "men"; *pin* = "pin"; *gòn* = "gone"; *fun* = "fun."

(3) *é, í, ú.* The *acute* and *grave* marks are combined (^) to indicate long vowels pronounced more quickly than usual. The last, *ú*, is most common; as *púl* = "pull." Compare *píl* = "pool."

(4) *á, ó.* The *horizontal* mark (-) placed over *a* and *o* indicates the vowel sounds in "far" (*fár*) and "all" (*ól*).

(5) *ă, ē, ī, ɔ, ゥ*. The *crescent* (^) placed over a vowel shows that the vowel is *long* (1) but *unaccented*; as *rál-wă* ("rail'-way"), *ĕ-jĕct*.

The last of these, *ゥ*, may also express *û* out of accent; as, *hănd-fûl, fûl-fil-ment*.

(6) *a, e, i, o, u*. The vowels that are *not marked at all* are *short* and *unaccented*.

Frequently, however, the accented syllable alone is marked; it being assumed that in those cases no further guidance is necessary.

(7) *ä* and *ö* may represent the vowel sounds in *far* (*fär*) and *all* (*öl*), when out of accent: as *ärtist*, but *ärtistic*; *ötum* (autumn), but *ötümnal* (autumnal).

(8) The *acute* mark (') placed *after a syllable* shows that the accent falls on that syllable. But it does not indicate any quality of the vowel. For example: *com-plain'd*, *al'-most*, *quart'-er*. The full marking for these words would be: *kom-pländ*, *öl-möst*, *kwört-er*.

BOOK V.



THE STAGE COACH.

WHEN the coach came round at last, with "London" blazoned in letters of gold upon the boot, it gave Tom such a turn, that he was half disposed to run away. But he didn't do it; for he took his seat upon the box instead, and looking down upon the four greys, felt as if he were another grey himself, or, at all events, a part of the turn-out; and was quite confused by the novelty and splendour of his situation.

And really it might have confused a less modest man than Tom to find himself sitting next that coachman;

for of all the swells that ever flourished a whip, professionally, he might have been elected emperor. He didn't handle his gloves like another man, but put them on—even when he was standing on the pavement, quite detached from the coach—as if the four greys were, somehow or other, at the ends of the fingers. It was the same with his hat. He did things with his hat, which nothing but an unlimited knowledge of horses and the wildest freedom of the road could ever have made him perfect in. Valuable little parcels were brought to him with particular instructions, and he pitched them into his hat, and stuck it on again, as if the laws of gravity did not admit of such an event as its being knocked off or blown off, and nothing like an accident could befall it. The guard too! Seventy breezy miles a-day were written in his very whiskers. His manners were a canter; his conversation a round trot. He was a fast coach upon a down-hill turnpike road; he was all pace. A waggon couldn't have moved slowly, with that guard and his key-bugle on the top of it.

These were all foreshadowings of London, Tom thought, as he sat upon the box, and looked about him. Such a coachman and such a guard never could have existed between Salisbury and any other place. The coach was none of your steady-going, yokel coaches, but a swaggering, rakish, dissipated, London coach; up all night, and lying by all day, and leading a terrible life. It cared no more for Salisbury than if it had been a hamlet. It rattled noisily through the best streets, defied

the cathedral, took the worst corners sharpest, went cutting in everywhere, making everything get out of its way ; and spun along the open country-road, blowing a lively defiance out of its key-bugle, as its last glad parting legacy.

It was a charming evening. Mild and bright. And even with the weight upon his mind which arose out of the immensity and uncertainty of London, Tom could not resist the captivating sense of rapid motion through the pleasant air. The four greys skimmed along, as if they liked it quite as well as Tom did ; the bugle was in as high spirits as the greys ; the coachman chimed in sometimes with his voice ; the wheels hummed cheerfully in unison ; the brass-work on the harness was an orchestra of little bells ; and thus, as they went clinking, jingling, rattling smoothly on, the whole concern, from the buckles of the leaders' coupling-reins to the handle of the hind boot, was one great instrument of music.

Yoho ! past hedges, gates, and trees ; past cottages and barns, and people going home from work. Yoho ! past donkey-chaises, drawn aside into the ditch, and empty carts with rampant horses, whipped up at a bound upon the little watercourse, and held by struggling carters close to the five-barred gate, until the coach had passed the narrow turning in the road. Yoho ! by churches dropped down by themselves in quiet nooks, with rustic burial-grounds about them, where the graves are green, and daisies sleep—for it is evening—on the bosoms of the dead. Yoho ! past streams, in which the cattle cool

their feet, and where the rushes grow ; past paddock-fences, farms, and rick-yards ; past last year's stacks, cut, slice by slice, away, and showing, in the wan ing light, like ruined gables, old and brown. Yoho ! down the pebbly dip, and through the merry water-splash, and up at a canter to the level road again. Yoho ! Yoho !

Yoho ! among the gathering shades ; making of no account the deep reflections of the trees, but scampering on through light and darkness, all the same, as if the light of London, fifty miles away, were quite enough to travel by, and some to spare. Yoho ! beside the village green, where cricket-players linger yet, and every little indentation made in the fresh grass by bat or wicket, ball or player's foot, sheds out its perfume on the night. Away with four fresh horses from the Bald-faced Stag, where topers congregate about the door admiring ; and the last team, with traces hanging loose, go roaming off towards the pond, until observed and shouted after by a dozen throats, while volunteering boys pursue them. Now with the clattering of hoofs and striking out of fiery sparks, across the old stone bridge, and down again into the shadowy road, and through the open gate, and far away, away, into the wold. Yoho !

See the bright moon ! High up before we know it : making the earth reflect the objects on its breast like water. Hedges, trees, low cottages, church steeples, blighted stumps and flourishing young slips, have all grown vain upon the sudden, and mean to contemplate their own fair images till morning. The poplars yonder rustle, that their quivering leaves may see themselves

upon the ground. Not so the oak ; trembling does not become *him* ; and he watches himself in his stout old burly steadfastness, without the motion of a twig. The moss-grown gate, ill-poised upon its creaking hinges, crippled and decayed, swings to and fro before its glass like some fantastic dowager ; while our own ghostly likeness travels on, Yoho ! Yoho ! through ditch and brake, upon the ploughed land and the smooth, along the steep hill-side and steeper wall, as if it were a phantom-hunter.

Clouds too ! And a mist upon the hollow ! Not a dull fog that hides it, but a light airy gauze-like mist, which in our eyes of modest admiration gives a new charm to the beauties it is spread before : as real gauze has done ere now, and would again, so please you, though we were the Pope. Yoho ! Why, now we travel like the moon herself. Hiding this minute in a grove of trees ; next minute in a patch of vapour ; emerging now upon our broad clear course ; withdrawing now, but always dashing on, our journey is a counterpart of hers. Yoho ! A match against the moon !

The beauty of the night is hardly felt, when day comes leaping up. Yoho ! Two stages, and the country roads are almost changed to a continuous street. Yoho ! past market-gardens, rows of houses, villas, crescents, terraces, and squares ; past waggons, coaches, carts ; past early workmen, late stragglers, drunken men, and sober carriers of loads ; past brick and mortar in its every shape ; and in among the rattling pavements, where a jaunty-seat upon a coach is not so easy to preserve !

Yoho! down countless turnings, and through countless mazy ways, until an old inn-yard is gained, and Tom Pinch, getting down, quite stunned and giddy, is in London!

DICKENS.

(*By permission of Messrs. Chapman & Hall.*)

<i>dis-pósed</i>	<i>flóür-ished</i>	<i>ex-ʌst-ed</i>
<i>con-fused'</i>	<i>vàl-ü-a-ble</i>	<i>nois'-i-ly</i>
<i>ndv-el-ty</i>	<i>in-strùc-tions</i>	<i>un-cèr-tain-ty</i>
<i>splènd-our</i>	<i>con-vers-á-tion</i>	<i>in-dent-á-tion</i>
<i>pér-fume</i>	<i>con-tèm-plate</i>	<i>con-tìn-ü-ous</i>
<i>èm-per-or</i>	<i>de-fí-ance</i>	<i>swag'-ger-ing</i> (<i>swdg-</i>)

blá-zoned (*bláznd*), painted ornamenteally, in bright (or *blazing*) colours; as grandly as a coat of arms (French, *blason*).

pro-fès-sion-al-ly, in the practice of his profession, or business; as a matter of business. Lat. *pro*, "forth, publicly," and *fateor*, "I confess, or own."

un-lim-it-ed, not limited, having no limits or bounds; boundless, absolute.

fore-shàd-ow-ings, shadows cast in advance; dim indications beforehand.

yók-el, country bumpkin.

dis-sip-ät-ed, given to dissipation; leading a reckless, wasteful, dissolute life;

throwing away, right and left, one's property and strength.

ca-thé-dral, the church containing the bishop's chair or throne. Grk. *kathedra*, "a seat;" from *kathezomai* (*kata*, "down," and *hezomai*, "I sit,") "I sit down."

leg-a-cy, property that is left to one by will, a bequest.

im-mèns-i-ty, immense extent hugeness. Lat. *in* (*in*), "not," and *mensus*, "measured."

cáp-tiv-ät-ing, carrying captive, charming, taking. Lat. *captum*, "to take."

dr-ches-tra (*dr-kes-tra*), the part of a theatre occupied by the musicians; hence, the musicians themselves.

rus-tic, of the country, plain, unadorned. Lat. *rus*, "the country." What is the other adjective from *rus* (*ruris*)? *con-greg-ate*, flock together.

Lat. *grex (gregis)*, "a flock." *vol-un-teer-ing*, offering their services; proposing, of one's own free will, to do something. French, *volontaire*, Lat. *voluntarius*, "a volunteer;" from Lat. *voluntas*,

"will, choice;" from *volo*, "I am willing."

blight-ed (blit-ed), blasted, withered up; the opposite of "flourishing."

fan-tas-tic, fanciful, whimsical; dressed strangely, according to one's own fancy or humour.

dow-a-ger, strictly, a widow with a dower; an old lady (of fashion).

Write out, in your own way, Tom Pinch's ride to London; or any similar journey.

KUBLA KHAN.

A VISION IN A DREAM.

IN Xanadu did Kubla Khan
A stately pleasure-dome decree :
Where Alph, the sacred river, ran
Through caverns measureless to man
Down to a sunless sea.

So twice five miles of fertile ground
With walls and towers were girdled round :
And there were gardens bright with sinuous rills
Where blossom'd many an incense-bearing tree ;
And here were forests ancient as the hills,
Enfolding sunny spots of greenery.
But oh ! that deep romantic chasm which slanted
Down the green hill athwart a cedarn cover !

A savage place ! as holy and enchanted
As e'er beneath a waning moon was haunted
By woman wailing for her demon-lover !
And from this chasm, with ceaseless turmoil seething,
As if this earth in fast thick pants were breathing,
A mighty fountain momently was forced :
Amid whose swift half-intermittent burst
Huge fragments vaulted like rebounding hail,
Or chaffy grain beneath the thresher's flail ;
And 'mid these dancing rocks at once and ever
It flung up momently the sacred river.
Five miles meandering with a mazy motion
Through wood and dale the sacred river ran,
Then reach'd the caverns measureless to man,
And sank in tumult to a lifeless ocean :
And 'mid this tumult Kubla heard from far
Ancestral voices prophesying war !

The shadow of the dome of pleasure
 Floated midway on the waves ;
Where was heard the mingled measure
 From the fountain and the caves.
It was a miracle of rare device,
 A sunny pleasure-dome with caves of ice ;
 A damsels with a dulcimer
 In a vision once I saw :
 It was an Abyssinian maid,
 And on her dulcimer she play'd,
 Singing of Mount Abora !
 Could I revive within me

Her symphony and song,
To such a deep delight 'twould win me
That, with music loud and long,



I would build that dome in air,
That sunny dome ! those caves of ice !
And all who heard should see them there,
And all should cry Beware ! Beware

His flashing eyes, his floating hair !
 Weave a circle round him thrice,
 And close your eyes with holy dread,
 For he on honey-dew hath fed,
 And drunk the milk of Paradise !

COLERIDGE.

státe-ly	en-fold-ing	méas-ure-less
cáv-erns	green'-e-ry	a-thwart' (-thwört)
fert-ilé	túr-moil	prō-phe-sy-ing
dé-více	re-bound'-ing	dúl-ci-mer
haunt'-ed (hönt-)	mír-a-cle	Pár-a-dise
vault'-ed (völt-)	mìn-gled	ìn-cense-bear-ing

de-cree, order (to be built).

Lat. *decretum*, "to decide."

sin-u-ous, winding, bending this way and that. Lat. *sinuosus*, from *sinus*, "a bend, curve." *ro-mán-tic*, such as might be described in a romance, or fiction; strangely wild, fantastic.

chasm (kàsm), a deep and narrow hollow or gorge. Grk.

chasma, "a yawning, or gaping place."

cé-darn, of cedar trees.—Compare, "silver, golden, &c."

en-chânt-ed, under a supernatural or magical charm. French, *enchanter*, Lat. *incant-*

are, "to sing a magic formula over."

mó-ment-ly, every moment.

in-ter-mit-ted, stopped. Lat. *inter*, "between," and *mitto*, "I send."

me-and-er-ing, winding. From the very crooked river *Meander* in Asia Minor.

an-cès-tral, of his ancestors, or forefathers.

the mingled *measure* : musical sounds, occurring at regular intervals.

sym-pho-ny, accompaniment. Grk. *symphonia*, from *sym* (*syn*), "with," and *phone*, "voice."

Point out some of the chief examples of Harmony of Sound and Sense.

THREE STATES OF MATTER.

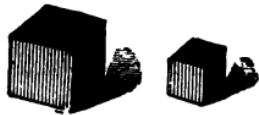
THE term *matter* signifies the substance, or elements, of which all bodies are composed. Matter exists in three very different states, namely, the solid, the liquid, and the gaseous ; and each of these states has certain properties which serve to distinguish it

A substance is said to be solid when its several parts unite firmly ; as iron, wood, stone, or coal. A solid body, such as a piece of iron or wood, resists any attempt to alter its shape or its size, always keeping the same size or volume and the same shape, unless it be violently destroyed.

In the case of a bottle and a glass or basin, you have two vessels of different shapes, but they may be of the same size ; so that, if you fill the bottle with water and pour the water into the glass or basin, you will find that the water exactly fills the glass or basin also. On the other hand, two pieces of wood, the one six inches square and the other two inches square, have both the same shape or figure, but the one is much larger than the other ; their size is different.

You see now what is meant by space or size or volume (for the three words mean the same thing), and what by figure or shape. Now, you cannot take a solid which has the shape of the one vessel and force it into

the shape of the other, although the size or volume of both is the same ; nor can you take a solid of the size or volume of the first wooden block and squeeze it into that of the second, although the shape of both blocks is the same. A perfect solid will keep its figure, and it will also keep its size. Bear in mind, however, that, when we say we cannot do a thing, we really mean we cannot do it without very great difficulty, and then not completely, but only to a very small extent.

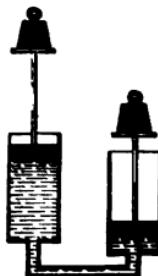


Liquids have a good deal of freedom of motion among their particles, readily adapting themselves to the form of the vessels that contain them ; as water, beer, vinegar. A liquid, like water, when kept in a bottle or other vessel, always spreads itself out, so as to make its surface level, but yet it will always keep its proper size or volume. You cannot by any means force a quart of water into a pint measure ; it will insist upon having its full volume, but it is not particular as to shape.

Let us, for example, take a quantity of water shut in at one end, while at the other there is a water-tight piston or plug. Now let us try to drive this piston down in order to force the water into smaller volume, and to do so let us put a large weight upon the piston ; but, notwithstanding all this, we cannot compress the water.

A liquid, such as water, presses downwards and sideways in every direction, the surface being level or tending to become level. The surface cannot remain slanting, for the part that is high up would at once begin to slide down towards the lowest part ; there would be nothing to keep it up. You may press the water in a basin on one side so as to make it rise on the other side ; but as soon as you withdraw the pressure, it will begin to return to the same level all over the basin. If the withdrawal be sudden, then the water will surge back with force proportional to the pressure, but the oscillation from side to side constantly tends to decrease, and the water gradually settles down to a level surface. Even in the case where tubes of different shapes and sizes—it matters not what the shape or the size may be—rise from the upper surface of a close vessel with which they have free communication, the water poured into one tube will in the first place fill the closed vessel and presently ascend the different tubes, keeping always exactly at the same level in them all.

A gas, again, has no surface ; for, if you put a



quantity of gas into a perfectly empty vessel, the gas will fill the whole vessel, and not a part only. A gas possesses freedom of motion among its particles in a more eminent degree than a liquid does; and in fact it has an intense desire to spread itself out and to fill any vacant space that is not already filled, and will strongly exert itself to do so. But a gas does not insist so violently as a liquid upon occupying a certain space; for by means of a proper amount of force, you may compress the gas which now fills a pint bottle into half a pint, or even into less space. In fact, a gas will be persuaded to go into less space, but a liquid will not be persuaded. Gases, however, on being liberated, regain their former dimensions. Hence they are called elastic fluids. Of this class are the air we breathe and the gas so extensively employed in lighting streets and dwellings.

We have now seen that, in the three different states of matter, the particles are held together with different degrees of firmness. If we take a piece of string or of wire, and try to break it into two parts, it exerts a force to prevent our doing so, and it is only when the force we exert is greater than the force with which it resists us that we succeed in breaking it. The different parts or particles of the string or of the wire are held together by a force which resists any attempt to pull them asunder. And so are the various parts or particles of all solid bodies, such as wood, stone, metals, and so on. It is often very difficult to break a substance to pieces, or bend it, or powder it, or alter its shape or size in any

way. Now this force which the neighbouring particles of a body exert to keep each other together, is called *cohesion*. But cohesion does not act except when the particles are very near each other ; for, if once a thing is broken or ground to powder, its particles cannot come easily together again.

Solids, liquids, and gases all expand—that is, separate their particles more or less—under the influence of heat ; and often with immense force. If you were to fill an iron ball quite full of water, shut it tightly down by means of a screw, and then heat the ball,—the force of the expansion would be great enough to burst the ball. In large iron and tubular bridges allowance must be made so that the iron has room to expand ; for in the middle of summer the bridge will be somewhat longer than in the middle of winter, and if it has not room to lengthen out, it will be injured by the force tending to expand it. There is an arrangement for this purpose in the Menai Tubular Bridge. We take advantage of the force of expansion and contraction in many ways—for instance, in making carriage wheels. The iron tire is first made red-hot, and in this state is fitted on loosely upon the wheel ; it is then rapidly cooled, and in so doing it contracts, grasps the wheel firmly, and becomes quite tight.

Substances when heated pass first from the solid to the liquid, and then from the liquid to the gaseous state. Ice, water, and steam have precisely the same composition ; ice becomes water if it be heated, while water

becomes steam if we continue the heat. The very same change will happen to other substances if we treat them in the same way. Let us, for instance, take a piece of the metal called zinc, and heat it; after some time it will melt, and if we still continue to heat it, it will at last pass away in the shape of zinc vapour. Even hard, solid iron or steel may be made to melt, and even driven away in the shape of vapour; and by means of an agent called electricity we can probably heat any substance sufficiently to drive it away in the state of vapour or gas.

We cannot, however, cool all bodies sufficiently to bring them into the solid or even into the liquid state. Thus, for instance, pure alcohol has never been cooled into a solid; but we know very well that all we have to do is to obtain greater cold in order to succeed in freezing alcohol. In like manner, we have never been able to cool the atmospheric air sufficiently to bring it into the liquid form; but we know very well that all we require in order to succeed is to obtain greater cold. You must not, however, imagine from what has been said, that cold means anything else than the absence of heat. Platinum is so difficult to melt that we cannot tell at what temperature it does so. And carbon is still more difficult to melt—indeed in the very hottest fire the coal or carbon is always solid; and no one ever heard of the coal melting down and trickling out through the furnace bars.

We thus see that the same sort of change takes place in all bodies through heat; that is to say, if we could

reach a temperature sufficiently low, all bodies would become solid like ice, and if we could reach one sufficiently high, all would become gaseous like steam.

PROF. BALFOUR STEWART'S *Physics Primer*
(adapted).

sig-ni-fies

prop-er-ties

with-draw'-al

el-e-ments

vi-o-lent-ly

pro-pór-tion-al

sól-id

de-stroy-ed

di-mèn-sions

li-quid

ex-dct-ly

al-low-an-ce

gás-e-ous

vol-ume

ar-ránge-ment

e-lás-tic

fig-ure

tém-per-a-ture

ad-apt-ing, fitting, suiting.

Lat. *ad*, "to," and *aptō*, "I fit."

com-préss, press together.

surge, to rise high, to swell.

Lat. *surgo*, "I rise."

os-cill-á-tion, swinging, moving, backwards and forwards—like a pendulum.

lib-er-ate, set free, release.

Lat. *liber*, "free."

co-hé-sion, sticking together.

Lat. *co*, "together," and *haesum*, "to stick."

ex-pán-sion, stretching out, enlargement ; lessening of the cohesion, or increase of the distance between the particles.

Lat. *ex*, "out," and *pansum*, "to spread."

con-trac-tion, the opposite of expansion ; drawing to-

gether ; increase of the cohesion, or lessening of the distance between the particles. Lat. *con*, "together," and *tractum*, "to draw."

e-lec-tri-ci-ty, the property of attracting light bodies ; a very subtle force, the same as lightning. From Grk. *electron*, "amber," in which the property was first observed.

at-mo-sphér-ic, belonging to, or connected with the atmosphere, or air.

ther-mo-me-ter, heat-measurer ; an instrument for measuring the temperature, showing the variations of heat and cold. Grk. *therme*, "heat," (*thermos*, "hot,") and *metron*, "a measure."

THE RETIRED CAT.

1 A POET's cat, sedate and grave
As poet well could wish to have,
Was much addicted to inquire
For nooks to which she might retire,
5 And where, secure as mouse in chink,
She might repose, or sit and think.
I know not where she caught the trick,—
Nature perhaps herself had cast her
In such a mould philosophique,
10 Or else she learned it of her master.
Sometimes ascending, debonair,
An apple tree, or lofty pear,
Lodged with convenience in the fork,
She watched the gardener at his work ;
15 Sometimes her ease and solace sought
In an old empty watering-pot ;
There wanting nothing, save a fan,
To seem some nymph in her sedan
Apparelled in exactest sort,
20 And ready to be borne to court.
But love of change, it seems, has place
Not only in our wiser race :
Cats also feel, as well as we,
That passion's force, and so did she.
25 Her climbing, she began to find,
Exposed her too much to the wind,

And the old utensil of tin
 Was cold and comfortless within :
 She therefore wished instead of those
 30 Some place of more serene repose,
 Where neither cold might come, nor air
 Too rudely wanton with her hair,
 And sought it in the likeliest mode
 Within her master's snug abode.

35 A drawer, it chanced, at bottom lined
 With linen of the softest kind,
 With such as merchants introduce
 From India, for the ladies' use,
 A drawer impending o'er the rest,

40 Half open in the topmost chest,
 Of depth enough and none to spare,
 Invited her to slumber there ;
 Puss with delight beyond expression
 Surveyed the scene and took possession.

45 Recumbent at her ease ere long,
 And lulled by her own humdrum song,
 She left the cares of life behind,
 And slept as she would sleep her last,
 When in came, housewifely inclined,

50 The chambermaid, and shut it fast ;
 By no malignity impelled,
 But all unconscious whom it held.
 Awakened by the shock, cried Puss,
 " Was ever cat attended thus !

55 The open drawer was left, I see,
 Merely to prove a nest for me,

For, soon as I was well composed,
Then came the maid, and it was closed.
How smooth these 'kerchiefs, and how sweet !

60 Oh what a delicate retreat !
I will resign myself to rest
Till Sol, declining in the west,
Shall call to supper, when, no doubt,
Susan will come and let me out."

65 The evening came, the sun descended,
And Puss remained still unattended.
The night rolled tardily away
(With her indeed 'twas never day),
The sprightly morn her course renewed,

70 The evening grey again ensued,
And Puss came into mind no more
Than if entombed the day before.
With hunger pinched, and pinched for room,
She now presaged approaching doom,

75 Nor slept a single wink, or purred,
Conscious of jeopardy incurred.

That night, by chance, the poet watching,
Heard an inexplicable scratching ;
His noble heart went pit-a-pat,

80 And to himself he said—" What's that ? "
He drew the curtain at his side,
And forth he peeped, but nothing spied ;
Yet, by his ear directed, guessed
Something imprisoned in the chest,

85 And, doubtful what, with prudent care
Resolved it should continue there.

At length, a voice which well he knew,
 A long and melancholy mew,
 Saluting his poetic ears,
 90 Consoled him and dispelled his fears :
 He left his bed, he trod the floor,
 He 'gan in haste the drawers explore,
 The lowest first, and without stop
 The rest in order to the top.

95 For 'tis a truth well known to most,
 That whatsoever thing is lost,
 We seek it, ere it come to light,
 In every cranny but the right.
 Forth skipp'd the cat, not now replete

100 As erst with airy self-conceit,
 Nor in her own fond apprehension
 A theme for all the world's attention,
 But modest, sober, cured of all
 Her notions hyperbolical,

105 And wishing for a place of rest
 Anything rather than a chest.
 Then stepp'd the poet into bed
 With this reflection in his head :

MORAL.

Beware of too sublime a sense
 110 Of your own worth and consequence.
 The man who dreams himself so great,
 And his importance of such weight,
 That all around, in all that's done,
 Must move and act for him alone,

115 Will learn in school of tribulation
The folly of his expectation.

COWPER.

<i>sed-áte</i>	<i>com-fort-less</i>	<i>con-vén-i-ence</i>
<i>a-scénd-ing</i>	<i>in-tro-duce' (-dyús)</i>	<i>ap-pár-elled</i>
<i>de-scénd-ed</i>	<i>in-vít-ed</i>	<i>house'-wife-ly</i>
<i>sur-veyed' (-vád)</i>	<i>im-pris-oned</i>	<i>un-cón-sci-ous</i>
<i>sal-út-ing</i>	<i>mél-an-cho-ly</i>	<i>ap-próach-ing</i>
<i>po-ét-ic</i>	<i>ex-pec-tá-tion</i>	<i>ap-pre-hén-sion</i>
<i>scene (sén)</i>		<i>spright-ly (sprít-)</i>

ad-dict-ed, given to, inclined to, and in the habit of. Lat.

ad, "to," and *dictum*, "to say, or declare."

phil-o-soph-iqué (-ék), philosophical. French form.

dé-bon-air', gracious, courteous.

Fr. *débonnaire*, from *de*, "of," *bon*, "good," *air*, "air, appearance, bearing."

sól-ace, comfort, consolation.

Lat. *solatium*, from *solor*, "I console."

nymph (nímf), a goddess of mountains, valleys, rivers, woods and trees, meadows, &c.; hence, a beautiful young woman.

se-dán, a covered chair, for one person, carried on poles by two men.

üt-éns-il (yüt-), an instrument for any use; vessels (in

kitchen), tools, &c. Lat. *utor*, "I use."

im-pénd-ing, hanging over. Lat. *im* (in), "upon," and *pendeo*, "I hang."

beyond expression. Give the meaning in various other forms. Also vary "with delight beyond expression." *re-cúmb-ent*, reclining, leaning or lying back or down. Lat. *re*, "back," and *cumbo*, "I lie."

mal-ig-ni-ty, ill-will, evil disposition. Lat. *malignus*, from *malus*, "bad," and *genus*, "kind, nature."

en-síed, followed, came on in succession.

en-tombed' (en-tíméd), laid in the tomb, buried.

pre-ságéd, perceived before-hand, foreboded.

jeo'-par-dy (*jē-pār-dē*), great danger, peril, risk.

in-curred, run into, fallen into.

Lat. *in*, "into," and *curro*, "I run."

in-ex-plic-a-ble, that cannot be explained. Lat. *in*, "not," *ex*, "out," *plico*, "I fold."

re-pléte, filled with, full of.

erst, formerly. "Erst" is the superlative of the word of which "ere" is the comparative.

hyp-er-bol-ic-al, exaggerated; much beyond the facts of the case.

tri-bül-á-tion, severe suffering, affliction.

Write out the story in prose.

ENGLAND SEVEN CENTURIES AGO.

THE sun was setting upon one of the rich grassy glades of the forest. Hundreds of broad-headed, short-stemmed, wide-branched oaks, which had witnessed perhaps the stately march of the Roman soldiery, flung their gnarled arms over a thick carpet of the most delicious greensward; in some places they were intermingled with beeches, hollies, and copsewood of various descriptions, so closely as totally to intercept the level beams of the sinking sun; in others they receded from each other, forming those long sweeping vistas, in the intricacy of which the eye delights to lose itself, while imagination considers them as the paths to yet wilder scenes of silvan solitude. Here the red rays of the sun shot a broken and discoloured light, that partially hung upon the shattered boughs and mossy trunks of the trees, and there they illuminated in brilliant patches

the portions of turf to which they made their way. A considerable open space, in the midst of this glade, seemed formerly to have been dedicated to the rites of Druidical superstition ; for, on the summit of a hillock, so regular as to seem artificial, there still remained part of a circle of rough unhewn stones, of large dimensions. Seven stood upright, the rest had been dislodged from their places, probably by the zeal of some convert to Christianity, and lay, some prostrate near their former site, and others on the side of the hill. One large stone only had found its way to the bottom, and in stopping the course of a small brook which glided smoothly round the foot of the eminence, gave, by its opposition, a feeble voice of murmur to the placid and elsewhere silent streamlet.

The human figures which completed this landscape were in number two, partaking, in their dress and appearance, of that wild and rustic character which belonged to the woodlands of the West-Riding of Yorkshire at that early period. The eldest of these men had a stern, savage, and wild aspect. His garment was of the simplest form imaginable, being a close jacket with sleeves, composed of the tanned skin of some animal, on which the hair had been originally left, but which had been worn off in so many places, that it would have been difficult to distinguish, from the patches that remained, to what creature the fur had belonged. This primeval vestment reached from the throat to the knees, and served at once all the usual purposes of body-clothing; there was no wider opening at the collar

than was necessary to admit the passage of the head, from which it may be inferred that it was put on by slipping it over the head and shoulders, in the manner of a modern shirt, or ancient hauberk. Sandals, bound with thongs made of boar's hide, protected the feet, and a roll of thin leather was twined artificially around the legs, and ascending above the calf, left the knees bare, like those of a Scottish Highlander. To make the jacket sit yet more close to the body, it was gathered at the middle by a broad leathern belt, secured by a brass buckle; to one side of which was attached a sort of scrip, and to the other a ram's horn, accoutred with a mouthpiece, for the purpose of blowing. In the same belt was stuck one of those long, broad, sharp-pointed, and two-edged knives, with a buck's-horn handle, which were fabricated in the neighbourhood, and bore even at this early period the name of a Sheffield whittle. The man had no covering upon his head, which was only defended by his own thick hair, matted and twisted together, and scorched by the influence of the sun into a rusty dark-red colour, forming a contrast with the overgrown beard upon his cheeks, which was rather of a yellow or amber hue. One part of his dress only remains, but it is too remarkable to be suppressed; it was a brass ring, resembling a dog's collar, but without any opening, and soldered fast round his neck, so loose as to form no impediment to his breathing, yet so tight as to be incapable of being removed, excepting by the use of the file. On this singular gorget was engraved, in Saxon characters, an inscription of the following

purport: "Gurth, the son of Beowulph, is the born thrall of Cedric of Rotherwood."

Beside the swine-herd, for such was Gurth's occupation, was seated upon one of the fallen Druidical monu-



ments, a person about ten years younger in appearance, and whose dress, though resembling his companion's in form, was of better materials, and of a more fantastic

appearance. His jacket had been stained of a bright purple hue, upon which there had been some attempt to paint grotesque ornaments in different colours. To the jacket he added a short cloak, which scarcely reached half-way down his thigh; it was of crimson cloth, though a good deal soiled, lined with bright yellow; and as he could transfer it from one shoulder to the other, or at his pleasure draw it all around him, its width, contrasted with its want of longitude, formed a fantastic piece of drapery. He had thin silver bracelets upon his arms, and on his neck a collar of the same metal, bearing the inscription: "Wamba, the son of Witless, is the thrall of Cedric of Rotherwood." This personage had the same sort of sandals with his companion, but instead of the roll of leather thong, his legs were cased in a sort of gaiters, of which one was red and the other yellow. He was provided also with a cap, having around it more than one bell, about the size of those attached to hawks, which jingled as he turned his head to one side or other; and as he seldom remained a minute in the same posture, the sound might be considered as incessant. Around the edge of this cap was a stiff bandeau of leather, cut at the top into open work, resembling a coronet, while a prolonged bag arose from within it, and fell down on one shoulder like an old-fashioned nightcap, or a jelly-bag, or the head-gear of a modern hussar. It was to this part of the cap that the bells were attached; which circumstance, as well as the shape of his head-dress, and his own half-crazed, half-cunning expression of countenance,

sufficiently pointed him out as belonging to the race of domestic clowns or jesters, maintained in the houses of the wealthy, to help away the tedium of those lingering hours which they were obliged to spend within doors. He bore, like his companion, a scrip attached to his belt, but had neither horn nor knife, being probably considered as belonging to a class whom it is esteemed dangerous to intrust with edge-tools. In place of these, he was equipped with a sword of lath, resembling that with which Harlequin operates his wonders upon the modern stage.

The outward appearance of these two men formed scarce a stronger contrast than their look and demeanour. That of the serf, or bondsman, was sad and sullen; his aspect was bent on the ground with an appearance of deep dejection, which might be almost construed into apathy, had not the fire which occasionally sparkled in his red eye manifested that there slumbered, under the appearance of sullen despondency, a sense of oppression, and a disposition to resistance. The looks of Wamba, on the other hand, indicated, as usual with his class, a sort of vacant curiosity, and fidgety impatience of any posture of repose, together with the utmost self-satisfaction respecting his own situation, and the appearance which he made. The dialogue which they maintained between them was carried on in Anglo-Saxon, which was universally spoken by the inferior classes, excepting the Norman soldiers and the immediate personal dependents of the great feudal nobles. But to give their conversation in

the original would convey but little information to the modern reader, for whose benefit we beg to offer the following translation :

“The curse of St. Withold upon these porkers!” said the swine-herd, after blowing his horn obstreperously, to collect together the scattered herd of swine, which, answering his call with notes equally melodious, made, however, no haste to remove themselves from the luxurious banquet of beech-mast and acorns on which they had fattened, or to forsake the marshy banks of the rivulet, where several of them, half plunged in mud, lay stretched at their ease, altogether regardless of the voice of their keeper. “The curse of St. Withold upon them and upon me!” said Gurth; “if the two-legged wolf snap not up some of them ere nightfall, I am no true man. Here, Fangs! Fangs!” he ejaculated at the top of his voice to a ragged wolfish-looking dog, a sort of lurcher, half mastiff, half greyhound, which ran limping about as if with the purpose of seconding his master in collecting the refractory grunters; but which, in fact, from misapprehension of the swine-herd’s signals, ignorance of his own duty, or malice prepense, only drove them hither and thither, and increased the evil which he seemed to design to remedy. “A mischief draw the teeth of him,” said Gurth, “and the mother of mischief confound the Ranger of the forest, that cuts the foreclaws of our dogs, and makes them unfit for their trade! Wamba, up and help me, an thou beest a man; take a turn round the back o’ the hill to gain the wind on them; and when thou’st got the weathergage, thou

mayst drive them before thee as gently as so many innocent lambs."

"Truly," said Wamba, without stirring from the spot, "I have consulted my legs upon this matter, and they are altogether of opinion, that to carry my gay garments through these sloughs would be an act of unfriendship to my sovereign person and royal wardrobe; wherefore, Gurth, I advise thee to call off Fangs and leave the herd to their destiny, which, whether they meet with bands of travelling soldiers, or of outlaws, or of wandering pilgrims, can be little else than to be converted into Normans before morning, to thy no small ease and comfort."

"The swine turned Normans to my comfort!" quoth Gurth; "expound that to me, Wamba, for my brain is too dull, and my mind too vexed, to read riddles."

"Why, how call you those grunting brutes running about on their four legs?" demanded Wamba.

"Swine, fool, swine," said the herd; "every fool knows that."

"And swine is good Saxon," said the Jester. "But how call you the sow, when she is flayed, and drawn, and quartered, and hung up by the heels, like a traitor?"

"Pork," answered the swine-herd.

"I am very glad every fool knows that too," said Wamba; "and pork, I think, is good Norman-French; and so, when the brute lives, and is in the charge of a Saxon slave, she goes by her Saxon name; but becomes a Norman, and is called pork, when she is carried to the Castle-hall to feast among the nobles. What dost thou think of this, friend Gurth, ha?"

"It is but too true doctrine, friend Wamba, however it got into thy fool's pate."

"Nay, I can tell you more," said Wamba, in the same tone ; "there is old Alderman Ox continues to hold his Saxon epithet, while he is under the charge of serfs and bondsmen such as thou, but becomes Beef, a fiery French gallant, when he arrives before the worshipful jaws that are destined to consume him. Mynheer Calf, too, becomes Monsieur de Veau in the like manner ; he is Saxon when he requires tendance, and takes a Norman name when he becomes matter of enjoyment."

"By St. Dunstan," answered Gurth, "thou speakest but sad truths ; little is left to us but the air we breathe, and that appears to have been reserved with much hesitation, solely for the purpose of enabling us to endure the tasks they lay upon our shoulders. The finest and the fattest is for their board ; the loveliest is for their couch ; the best and bravest supply their foreign masters with soldiers, and whiten distant lands with their bones, leaving few here who have either the will or the power to protect the unfortunate Saxon.—Here, here," he exclaimed again, raising his voice, "so ho ! so ho ! well done, Fangs ! thou hast them all before thee now, and bring'st them on bravely, lad."

Gurth had now got his herd before him, and, catching up a long quarterstaff which lay upon the grass beside him, with the aid of Fangs he drove them down one of the long dim vistas which we have endeavoured to describe. And Wamba accompanied his companion.

SCOTT.

<i>writ-nessed</i>	<i>Drū-àd-ic-al</i>	<i>fan-tàs-tic</i>
<i>re-cé-d-ed</i>	<i>súp-er-stí-tion</i>	<i>pér-son-age</i>
<i>dis-col'-oured (-kùl-)</i>	<i>är-ti-fí-cial</i>	<i>grot-èsque (-èsk)</i>
<i>pár-tial-ly (-shal-)</i>	<i>è-min-ence</i>	<i>mel-ód-i-ous</i>
<i>de-mean'-our</i>	<i>dráp-e-ry</i>	<i>bànd-eau (-o)</i>
<i>il-lúm-in-ät-ed</i>	<i>lòng-i-tude (lòn-ji-)</i>	<i>im-pèd-i-ment</i>

gnärled (*närld*), twisted in large knots, knotty.

in-ter-cépt, stop (on the way), cut off. Lat. *inter*, "between" (two points), and *captum*, "to take."

vis-ta, view, as along an avenue of trees. Ital. and Span. *vista*; from Lat. *visum*, "to see."

in-tric-å-cy, entangled state, entanglement.

dè-dic-ät-ed, solemnly or religiously devoted.

pro-strate, lying flat. Lat. *pro*, "before," and *stratum*, "to strew."

Rid-ing, for "thriding" (or *thrithing*), a "third-ing," or third part.

prim-év-al, of the early ages (of the world). Lat. *primus*, "first," and *ævum*, "age."

ac-coutred' (-kúterd), equipped, furnished.

fùb-ric-ät-ed, made, constructed. Lat. *faber*, "a workman."

thrall (*thröł*), serf, bondsman.

té-di-um, weariness.

de-jèc-tion, de-spònd-en-cy, downcast feelings, downheartedness; want of hope.

con-strüed, interpreted, regarded as.

å-path-y, listlessness, want of interest. Grk. *a*, "without," *pathos*, "feeling."

di-a-logue (-log), conversation. Grk. *dialogos*, from *dia*, "through, from one to another," and *logos*, "speech."

è-jac-ål-åte, cry out.

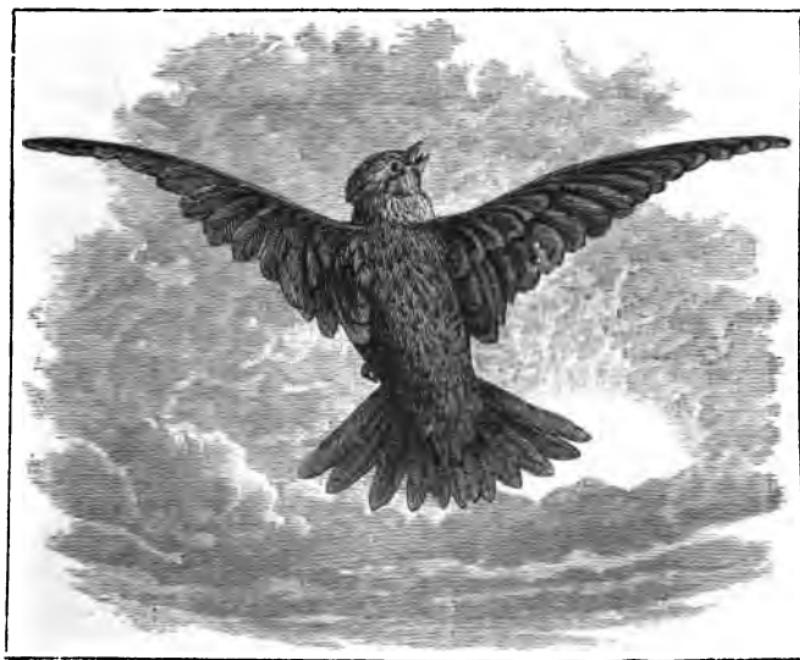
re-fräc-tor-y, obstinate, stubborn, perverse.

mis-ap-pré-hèn-sion, apprehending or understanding in a wrong sense.

malice *prö-pènse*, malice aforethought, intended. Lat. *præ*, "before," and *pensum*, "to weigh, or consider."

weather-gage, the *gage* of, or that which showss, the weather; the windward side.

slough (*slou*), deep muddy, or boggy, place.



THE SKYLARK.

BIRD of the wilderness,
Blithesome and cumberless,
Sweet be thy matin o'er moorland and lea;
Emblem of happiness,
Blest be thy dwelling-place—
Oh, to abide in the desert with thee !

Wild is thy lay and loud,
Far in the downy cloud;
Love gives it energy, love gave it birth :
Where, on thy downy wing,
Where art thou journeying ?
Thy lay is in heaven, thy love is on earth.

O'er fell and fountain sheen,
O'er moor and mountain green,
O'er the red streamer that heralds the day,
Over the cloudlet dim,
Over the rainbow's rim,
Musical cherub, soar, singing, away.

Then when the gloaming comes,
Low in the heather blooms,
Sweet will thy welcome, and home of love, be ;
Emblem of happiness,
Blest is thy dwelling-place—
Oh, to abide in the desert with thee !

HOGG.

BAMBOO.

DURING my many journeys in Borneo, and especially during my various residences among the Dyaks, I first came to appreciate the admirable qualities of the bamboo. In those parts of South America which I had previously visited, these gigantic grasses were comparatively scarce ; and, where found, but little used, their place being taken as to one class of uses by the great variety of palms, and as to another by calabashes and gourds. Almost all tropical countries produce bamboos, and, wherever they are found in abundance, the natives apply them to a variety of uses. Their strength, lightness, smoothness, straightness, roundness and hollowness,

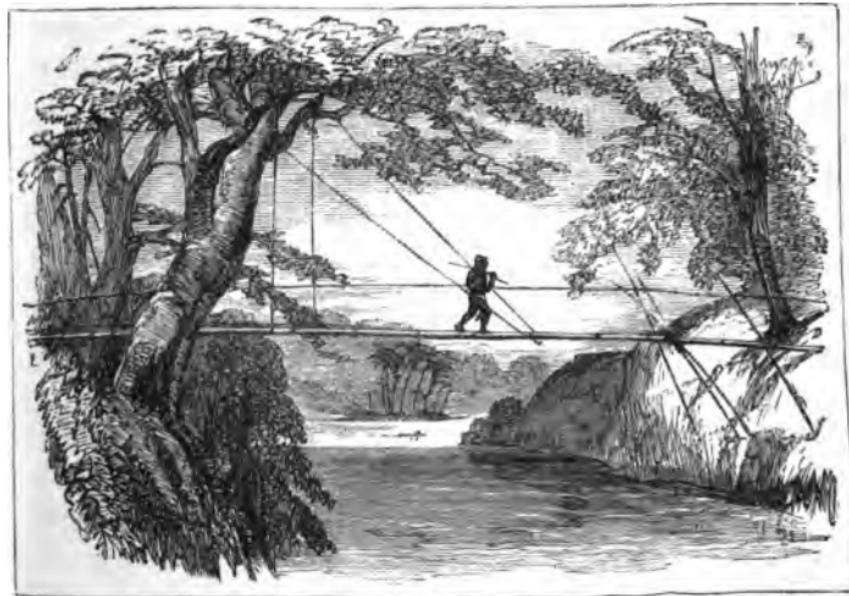
the facility and regularity with which they can be split, their many different sizes, the varying length of their joints, the ease with which they can be cut and with which holes can be made through them, their hardness outside, their freedom from any pronounced taste or smell, their great abundance, and the rapidity of their growth and increase, are all qualities which render them useful for a hundred different purposes, to serve which other materials would require much more labour and preparation. The bamboo is one of the most wonderful and most beautiful productions of the tropics, and one of nature's most valuable gifts to uncivilized man.

The Dyak houses are all raised on posts, and are often two or three hundred feet long and forty or fifty wide. The floor is always formed of strips split from large bamboos, so that each may be nearly flat and about three inches wide, and these are firmly tied down with rattan to the joists beneath. When well made, this is a delightful floor to walk upon barefooted, the rounded surfaces of the bamboo being very smooth and agreeable to the feet, while at the same time affording a firm hold. But, what is more important, they form with a mat over them an excellent bed, the elasticity of the bamboo and its rounded surface being far superior to a more rigid and a flatter floor. Here we at once find a use for bamboo which cannot be supplied so well by another material without a vast amount of labour, palms and other substitutes requiring much cutting and smoothing, and not being equally good when finished. When, however, a flat, close floor is required, excellent

boards are made by splitting open large bamboos on one side only, and flattening them out so as to form slabs eighteen inches wide and six feet long, with which some Dyaks floor their houses. These with constant rubbing of the feet and the smoke of years become dark and polished, like walnut or old oak, so that their real material can hardly be recognized. What labour is here saved to a savage whose only tools are an axe and a knife, and who, if he wants boards, must hew them out of the solid trunk of a tree, and must give days and weeks of labour to obtain a surface as smooth and beautiful as the bamboo thus treated affords him ! Again, if a temporary house is wanted, either by the native in his plantation or by the traveller in the forest, nothing is so convenient as the bamboo, with which a house can be constructed with a quarter of the labour and time required if other materials are used.

The Hill Dyaks in the interior of Sarawak make paths for long distances from village to village and to their cultivated grounds, in the course of which they have to cross many gullies and ravines, and even rivers ; or sometimes, to avoid a long circuit, to carry the path along the face of a precipice. In all these cases the bridges they construct are of bamboo, and so admirably adapted is the material for this purpose, that it seems doubtful whether they ever would have attempted such works if they had not possessed it. The Dyak bridge is simple but well designed. It consists merely of stout bamboos crossing each other at the roadway like the letter X, and rising a few feet above it. At the crossing

they are firmly bound together, and to a large bamboo which lies upon them and forms the only pathway, with a slender and often very shaky one to serve as a handrail. When a river is to be crossed an overhanging tree is chosen, from which the bridge is partly suspended and partly supported by diagonal struts from the banks,

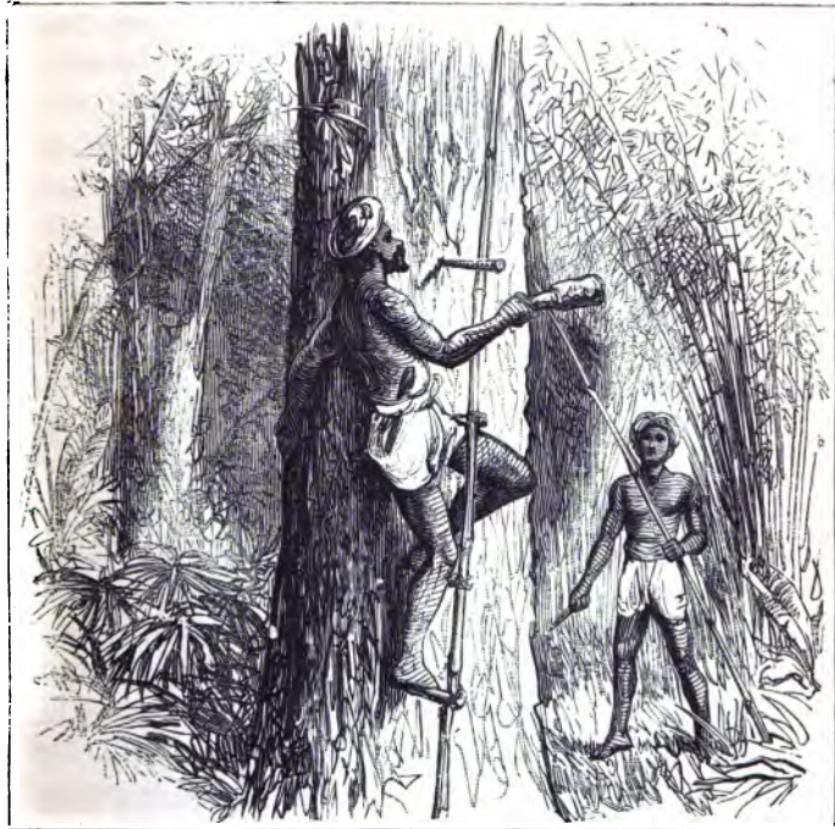


so as to avoid placing posts in the stream itself, which would be liable to be carried away by floods. In carrying a path along the face of a precipice, trees and roots are made use of for suspension ; struts arise from suitable notches or crevices in the rocks, and, if these are not sufficient, immense bamboos fifty or sixty feet long are fixed on the banks or on the branch of a tree below.

These bridges are traversed daily by men and women carrying heavy loads, so that any insecurity is soon discovered, and, as the materials are close at hand, immediately repaired. When a path goes over very steep ground, and becomes slippery in very wet or very dry weather, the bamboo is used in another way. Pieces are cut about a yard long, and opposite notches being made at each end, holes are formed through which pegs are driven, and firm and convenient steps are thus formed with the greatest ease and celerity. It is true that much of this will decay in one or two seasons, but it can be so quickly replaced as to make it more economical than using a harder and more durable wood.

One of the most striking uses to which bamboo is applied by the Dyaks, is to assist them in climbing lofty trees. One day I shot a Mias, which caught in a fork of the tree and remained fixed. As I was very anxious to get it, I tried to persuade two young Dyaks who were with me to cut down the tree, which was tall, perfectly straight, and smooth-barked, and without a branch for fifty or sixty feet. To my surprise, they said they would prefer climbing up it, but it would be a good deal of trouble, and, after a little talking together, they said they would try. They first went to a clump of bamboo that stood near, and cut down one of the largest stems. From this they chopped off a short piece, and splitting it, made a couple of stout pegs, about a foot long, and sharp at one end. Then cutting a thick piece of wood for a mallet, they drove one of the pegs into the tree and

hung their weight upon it. It held, and this seemed to satisfy them, for they immediately began making a quantity of pegs of the same kind, while I looked on



with great interest, wondering how they could possibly ascend such a lofty tree by merely driving pegs in it, the failure of any one of which at a good height would certainly cause their death. When about two dozen

pegs were made, one of them began cutting some very long and slender bamboo from another clump, and also prepared some cord from the bark of a small tree. They now drove in a peg very firmly at about three feet from the ground, and, bringing one of the long bamboos, stood it upright close to the tree, and bound it firmly to the two first pegs, by means of the bark cord, and small notches near the head of each peg. One of the Dyaks now stood on the first peg and drove in a third, about level with his face, to which he tied the bamboo in the same way, and then mounted another step, standing on one foot, and holding by the bamboo at the peg immediately above him, while he drove in the next one. In this manner he ascended about twenty feet, when the upright bamboo becoming thin, another was handed up by his companion, and this was joined on by tying both bamboos to three or four of the pegs. When this was also nearly ended, a third was added, and shortly after, the lowest branches of the tree were reached, along which the young Dyak scrambled, and soon sent the Mias tumbling headlong down. I was exceedingly struck by the ingenuity of this mode of climbing, and the admirable manner in which the peculiar properties of the bamboo were made available. The ladder itself was perfectly safe, since if any one peg were loose or faulty, and gave way, the strain would be thrown on several others above and below it. I now understood the use of the line of bamboo pegs sticking in trees, which I had often seen, and wondered for what purpose they could have been put there.

This method of climbing is constantly used in order to obtain wax, which is one of the most valuable products of the country. The honey-bee of Borneo very generally hangs its combs under the branches of the Tappan, a tree which towers above all others in the forest, and whose smooth cylindrical trunk often rises a hundred feet without a branch. The Dyaks climb these lofty trees at night, building up their bamboo ladder as they go, and bringing down gigantic honeycombs. These furnish them with a delicious feast of honey, and young bees, besides the wax, which they sell to traders, and with the proceeds buy the much-coveted brass wire, earrings, and gold-edged handkerchiefs with which they love to decorate themselves. In ascending Durian and other fruit trees, which branch at from thirty to fifty feet from the ground, I have seen them use the bamboo pegs only, without the upright bamboo which renders them so much more secure.

The outer rind of the bamboo, split and shaved thin, is the strongest material for baskets ; hen-coops, bird-cages, and conical fish-traps are very quickly made from a single joint, by splitting off the skin in narrow strips left attached to one end, while rings of the same material or of rattan are twisted in at regular distances. Water is brought to the houses by little aqueducts formed of large bamboos split in half and supported on crossed sticks of various heights so as to give it a regular fall. Thin long-jointed bamboos form the Dyaks' only water-vessels, and a dozen of them stand in the corner of every house. They are clean, light, and easily

carried, and are in many ways superior to earthen vessels for the same purpose. They also make excellent cooking utensils; vegetables and rice can be boiled in them to perfection, and they are often used when travelling. Salted fruit or fish, sugar, vinegar, and honey are preserved in them instead of in jars or bottles. In a small bamboo case, prettily carved and ornamented, the Dyak carries his sirih and lime for betel chewing, and his little long-bladed knife has a bamboo sheath. His favourite pipe is a huge hubble-bubble, which he will construct in a few minutes, by inserting a small piece of bamboo for a bowl obliquely into a large cylinder about six inches from the bottom, containing water, through which the smoke passes to a long slender bamboo tube. There are many other small matters for which bamboo is daily used, but enough has now been mentioned to show its value. In other parts of the Archipelago I have myself seen it applied to many new uses, and it is probable that my limited means of observation did not make me acquainted with one-half the ways in which it is serviceable to the Dyaks of Sarawak.

A. R. WALLACE.

<i>jour'-ney</i>	<i>tèm-por-ar-y</i>	<i>com-pàr-a-tive-ly</i>
<i>rè-sid-ence</i>	<i>prè-cip-ice</i>	<i>reg-ùl-àr-i-ty</i>
<i>àd-mir-a-ble</i>	<i>de-signed</i>	<i>un-civ-il -ized</i>
<i>pro-dùc-tion</i>	<i>sus-pènd-ed</i>	<i>e-las-tì-ci-ty</i>
<i>ma-tér-i-al</i>	<i>sus-pèn-sion</i>	<i>ac-quaint'-ed</i>
<i>rè-cog-nized</i>	<i>cyl-lind-ric-al</i>	<i>sèr-vice-a-ble</i>
<i>hànd-ker-chiefs</i>		<i>Ar-chi-pèl-a-go</i>

Dy-aks, tribes in Borneo. The other inhabitants are Malays and Chinese.

ap-pré-ci-ate, set a (proper) value on; esteem highly. Lat. *ad*, "to," and *preium*, "price."

cùl-a-bash, a large pear-shaped fruit.

fa-cil-i-ty, ease. Lat. *facilis*, "easy."

pro-nounced', stated, declared; strongly marked.

rav-iné' (rav-én), a deep hollow, or gorge, made by violent hill-streams.

cir-cuit (sir-kit), roundabout way. Lat. *circutus*, "a way round," from *circum*, "about," and *itum*, "to go."

di-à-gon-al, passing from one corner or angle to another corner or angle opposite. Grk. *dia*, "through," and *gonia*, "an angle."

in-sé-cur-i-ty, want of security, firmness, or safety; weakness.

cel-ér-i-ty, speed, quickness. Lat. *celer*, "swift."

ec-o-nòm-ic-al, thrifty.

Mi-as, the native name, in Borneo, for the Orang-utan. *in-gen-u-i-ty (-yú-)*, cleverness, skilful device.

gi-gant-ic, giant-like, enormous.

Du'-ri-an, "emperor of fruits;" "round or slightly oval, about the size of a large cocoanut, of green colour, and covered all over with short stout spines. . . . The pulp is the eatable part, and its consistence and flavour are indescribable. A rich butter-like custard highly flavoured with almonds gives the best general idea of it, but intermingled with it come wafts of flavour that call to mind cream-cheese, onion-sauce, brown sherry, and other incongruities. . . . In fact to eat Durians is a new sensation, worth a voyage to the East to experience." (A. R. WALLACE.)

à-que-duct, course or channel along which to convey water.

Lat. *aqua*, "water," and *ductum*, "to lead."

ob-lique'-ly (-lék-), aslant.





THE BANYAN TREE.

'TWAS a fair scene wherein they stood,
A green and sunny glade amid the wood,
And in the midst an aged Banyan grew.

It was a goodly sight to see
That venerable tree,
For o'er the lawn, irregularly spread,
Fifty straight columns propt its lofty head ;
And many a long depending shoot,
Seeking to strike its root,
Straight, like a plummet, grew towards the ground.

Some on the lower boughs, which crost their way,
 Fixing their bearded fibres, round and round,
 With many a ring and wild contortion wound ;
 Some to the passing wind, at times, with sway
 Of gentle motion swung ;
 Others of younger growth, unmoved, were hung
 Like stone-drops from the cavern's fretted height.
 Beneath was smooth and fair to sight,
 Nor weeds nor briers deformed the natural floor ;
 And through the leafy cope which lowered it o'er
 Came gleams of chequered light.
 So like a temple did it seem, that there
 A pious heart's first impulse would be prayer.

SOUTHEY.

<i>ir-règ-ùl-ar-ly</i>	<i>straight</i>	<i>de-formed</i>
<i>col-umn (-um)</i>	<i>boughs</i>	<i>chèqu-ered (chèk-)</i>
<i>un-moved' (-múrvd)</i>	<i>bow'ered</i>	<i>im-pulse</i>

Bàn-yan, a tree of the bread fruit and mulberry order, a native of India. The Hindoos hold it in high veneration. *vèn-er-a-ble*, worthy of respect, reverence, and awe—from age or religious feeling.

de-pènd-ing, hanging down. Lat. *de*, “down,” and *pendeo*, “I hang.” *con-tòr-tion*, twist. Lat. *con*, “together,” and *tortum*, “to twist, or turn forcibly round.” *cope*, covering overhead.



THE TRUE FAIRY TALE.

AND now I will tell you a fairy tale. I call it a fairy tale, because it is so strange ; indeed I think I ought to call it the fairy tale of all fairy tales, for, by the time we get to the end of it, I think it will explain to you how our forefathers got to believe in fairies, and trolls, and elves, and scratlings, and all the strange little people who were said to haunt the mountains and the caves.

Well, once upon a time, so long ago that no man can tell when, the land was so much higher, that between England and Ireland, and, what is more, between England and Norway, was firm dry land. The country then must have looked—at least we know it looked so in Norfolk—very like what our moors look like here. There were forests of Scotch fir, and of spruce too, which is not wild in England now, though you may see plenty in every plantation. There were oaks and alders, yews and sloes, just as there are in our woods now. There was buck-bean in the bogs, and white and yellow water-lilies, horn-wort, and pond-weeds, just as there are now in our ponds. There were wild horses, wild deer, and wild oxen, those last of an enormous size. There were little yellow roe-deer, which will not surprise you, for there are hundreds and thousands in Scotland to this day ; and, as you know, they will thrive well enough in our woods now. There were beavers too : but that must not surprise you, for there were beavers in South Wales long after the Norman Conquest, and there are

beavers still in the mountain glens of the south-east of France. There were honest little water-rats too, who I dare say sat up on their hind-legs like monkeys, nibbling the water-lily pods, thousands of years ago, as they do in our ponds now. Well, so far we have come to nothing strange: but now begins the fairy tale.

Mixed with all these animals, there wandered about great herds of elephants and rhinoceroses; not smooth-skinned, mind, but covered with hair and wool, like those which are still found sticking out of the everlasting ice cliffs, at the mouth of the Lena and other Siberian rivers, with the flesh, and skin, and hair so fresh upon them, that the wild wolves tear it off, and snarl and growl over the carcase of monsters who were frozen up thousands of years ago. And with them, stranger still, were great hippopotamuses; who came, perhaps, northward in summer time along the sea-shore and down the rivers, having spread hither all the way from Africa; for in those days, you must understand, Sicily, and Italy, and Malta—look at your map—were joined to the coast of Africa: and so, it may be, was the rock of Gibraltar itself; and over the sea where the Straits of Gibraltar now flow was firm dry land, over which hyenas and leopards, elephants and rhinoceroses ranged into Spain; for their bones are found at this day in the Gibraltar caves. And this is the first chapter of my fairy tale.

Now while all this was going on, and perhaps before this began, the climate was getting colder year by year—we do not know how; and, what is more, the land was sinking; and it sank so deep, that at last nothing

was left out of the water but the tops of the mountains in Ireland, and Scotland, and Wales. It sank so deep that it left beds of shells belonging to the Arctic regions nearly two thousand feet high upon the mountain side. And so'

"It grew wondrous cold,
And ice mast-high came floating by,
As green as emerald."

But there were no masts then to measure the icebergs by, nor any ship nor human being there. All we know is that the icebergs brought with them vast quantities of mud, which sank to the bottom, and covered up that pleasant old forest-land in what is called boulder-clay; clay full of bits of broken rock, and of blocks of stone so enormous, that nothing but an iceberg could have carried them. So all the animals were drowned or driven away, and nothing was left alive, perhaps, except a few little hardy plants which clung about cracks and gullies in the mountain tops; and whose descendants live there still. That was a dreadful time; the worst, perhaps, of all the age of Ice; and so ends the second chapter of my fairy tale.

Now for my third chapter. "When things come to the worst," says the proverb, "they commonly mend;" and so did this poor frozen and drowned land of England and France and Germany, though it mended very slowly. The land began to rise out of the sea once more, and rose till it was perhaps as high as it had been at first, and hundreds of feet higher than it

is now ; but still it was very cold, covered, in Scotland at least, with one great sea of ice and glaciers descending down into the sea. But as the land rose, and grew warmer too, while it rose, the wild beasts who had been driven out by the great drowning came gradually back again. As the bottom of the old icy sea turned into dry



land, and got covered with grasses, and weeds, and shrubs once more, elephants, rhinoceroses, hippopotamuses, oxen—sometimes the same species, sometimes slightly different ones—returned to France, and then to England (for there was no British Channel then to stop them); and with them came other strange animals, especially

the great Irish elk, as he is called, as large as the largest horse, with horns sometimes ten feet across. You can judge what a noble animal he must have been. Enormous bears came too, and hyænas, and a tiger or lion (I cannot say which), as large as the largest Bengal tiger now to be seen in India.

And in those days—we cannot, of course, exactly say when—there came—first I suppose into the south and east of France, and then gradually onward into England and Scotland and Ireland—creatures without any hair to keep them warm, or scales to defend them, without horns or tusk to fight with, or teeth to worry and bite; the weakest you would have thought of the beasts, and yet stronger than all the animals, because they were Men, with reasonable souls. Whence they came we cannot tell, nor why; perhaps from mere hunting after food, and love of wandering and being independent and alone. Perhaps they came into that icy land for fear of stronger and cleverer people than themselves; for we have no proof, none at all, that they were the first men that trod this earth. But be that as it may, they came; and so cunning were these savage men, and so brave likewise, though they had no iron among them, only flint and sharpened bones, yet they contrived to kill and eat the mammoths, and the giant oxen, and the wild horses, and the reindeer, and to hold their own against the hyænas, and tigers, and bears, simply because they had wits, and the dumb animals had none. And that is the strangest part to me of all my fairy tale. For what a man's wits are, and why he has them, and

therefore is able to invent and to improve, while even the cleverest ape has none, and therefore can invent and improve nothing, and therefore cannot better himself, but must remain from father to son, and father to son again, a stupid, pitiful, ridiculous ape, while men can go on civilizing themselves, and growing richer and



more comfortable, wiser and happier, year by year—how that comes to pass, I say, is to me a wonder and a prodigy and a miracle, stranger than all the most fantastic marvels you ever read in fairy tales.

You may find the flint weapons which these old savages used buried in many a gravel-pit up and down France and the south of England. But most of their

remains are found in caves which water has eaten out of the limestone rocks, like that famous cave of Kent's Hole at Torquay. In it, and in many another cave, lie the bones of animals which the savages ate, and cracked to get the marrow out of them, mixed up with their flint-weapons and bone harpoons, and sometimes with



burnt ashes and with round stones, used perhaps to heat water, as savages do now, all baked together into a hard paste or breccia by the lime. These are in the water, and are often covered with a floor of stalagmite which has dripped from the roof above and hardened into stone. In these caves, no doubt, the savages lived : for not only

have weapons been found in them, but actually drawings scratched (I suppose with flint) on bone or mammoth ivory—drawings of elk, and bull, and horse, and ibex—and one, which was found in France, of the great mammoth himself, the woolly elephant, with a mane on his shoulders like a lion's mane.

Sometimes, again, especially in Denmark, these savages have left behind upon the shore mounds of dirt, which are called there “kjökken-möddings”—“kitchen-middens” as they would say in Scotland, “kitchen-dirt-heaps” as we should say here down South—and a very good name for them that is; for they are made up of the shells of oysters, cockles, mussels, and periwinkles, and other shore-shells besides, on which those poor creatures fed; and mingled with them are broken bones of beasts, and fishes, and birds; and flint knives, and axes, and sling stones; and here and there hearths, on which they have cooked their meals in some rough way. And that is nearly all we know about them; but this we know from the size of certain of the shells, and from other reasons which you would not understand, that these mounds were made an enormous time ago, when the water of the Baltic Sea was far more salt than it is now.

But what has all this to do with my fairy tale?
This:—

Suppose that these people, after all, had been fairies? I am in earnest. Of course, I do not mean that these folk could make themselves invisible, or that they had any supernatural powers—any more, at least, than you and I have—or that they were anything but savages:

but this I do think, that out of old stories of these savages grew up the stories of fairies, elves, and trolls, and scratlings, and cluricaunes, and ogres, of which you have read so many.

When stronger and bolder people, like the Irish, and the Highlanders of Scotland, and the Gauls of France, came northward with their bronze and iron weapons; and still more, when our own forefathers, the Germans and the Norsemen, came, these poor little savages, with their flint arrows and axes, were no match for them and had to run away northward, or to be all killed out; for people were fierce and cruel in those old times, and looked on every one of a different race from themselves as a natural enemy. They had not learnt—alas! too many have not learnt it yet—that all men are brothers for the sake of Jesus Christ our Lord. So these poor savages were driven out, till none were left, save the little Lapps up in the north of Norway, where they live to this day.

But stories of them, and of how they dwelt in caves, and had strange customs, and used strange weapons, and how the elf-bolts (as their flint arrow-heads are still called) belonged to them, lingered on, and were told round the fire on winter nights, and added to, and played with, half in fun, till a hundred legends sprang up about them, which used once to be believed by grown-up folk, but which now only amuse children. And because some of these savages were very short, as the Lapps and Esquimaux are now, the story grew of their being so small that they could make themselves

invisible ; and because others of them were (but probably only a few) very tall and terrible, the story grew that there were giants in that old world, like that famous Gogmagog, whom Brutus and his Britons met (so old fables tell), when they landed first at Plymouth, and fought him, and threw him over the cliff. Ogres, too—of whom you read in fairy tales—I am afraid that there were such people once, even here in Europe ; strong and terrible savages, who ate human beings. Of course, the legends and tales about them became ridiculous and exaggerated as they passed from mouth to mouth over the Christmas fire, in the days when no one could read or write. But that the tales began by being true any one may well believe who knows how many cannibal savages there are in the world even now. I think that, if ever there was an ogre in the world, he must have been very like a certain person who lived, or was buried, in a cave in the Neanderthal, between Elberfeld and Dusseldorf, on the Lower Rhine. The skull and bones which were found there (and which are very famous now among scientific men) belonged to a personage whom I should have been very sorry to meet, and still more to let you meet, in the wild forest ; to a savage of enormous strength of limb (and I suppose of jaw), likewise,

“like an ape,
With forehead villainous low ;”

who could have eaten you if he would ; and (I fear) also would have eaten you if he could. Such savages

may have lingered (I believe, from the old ballads and romances, that they did linger) for a long time in lonely forests and mountain caves, till they were all killed out by warriors who wore mail-armour, and carried steel sword, and battle-axe, and lance.

And so ends my fairy tale.

But is it not a wonderful tale? More wonderful, if you will think over it, than any story invented by man.

CHARLES KINGSLEY.

<i>el-e-phant</i>	<i>èm-er-ald</i>	<i>arc-tic</i>
<i>leo'pard</i> (<i>lèp-ärd</i>)	<i>clèv-er-er</i>	<i>shārp-enèd</i>
<i>hy-œ'-na</i> (<i>hī-é-na</i>)	<i>pìt-i-füll</i>	<i>hārd-enèd</i>
<i>rea'-son-a-ble</i> (<i>rē-</i>)	<i>in-dē-pènd-ent</i>	<i>vìll-an-ous</i>
<i>süp-er-nat-ür-al</i>	<i>rid-ic-üll-ous</i>	<i>civ-il-iz-ing</i>

The Norman Conquest. A.D.
1066.

rhin-ō-cer-os (*rīn-*). From Grk. *rhis* (*rhinos*), "nose," and *keras*, "horn."

hip-po-pot-a-mus. Grk. *hippos*, "horse," and *potamos*, "river": "the river-horse."

Remark upon the order of the compounding words.

boul-der (*bōl-*), rounded, water-worn block of stone.

con-trived, found ways and means, made (successful) plans. French *controuver*, "to devise," from *con*, and *trouver*, "to find."

wonder, prodigy, miracle. The

second word is stronger or more emphatic than the first, and the third than the second. *pròdig-y* (-*dij-*), a wonder; something extraordinary and astonishing. Lat. *prodigium*, from *pro*, "forth, before," and *dig* or *dic*, "point out;" objects and occurrences out of the ordinary course of things were looked upon as signs *pointing out* future events to such as could read them.

brèc-ci-a (*brèk-shi-a*), a mass of angular fragments of rock united by a cement. Ital. *breccia*, "crumb, fragment." A similar cemented mass of

rounded water-worn pebbles is called a "conglomerate" rock.

sta-lag-mite, a cone of carbonate of lime on the floor of a cavern, formed by the water (charged with lime) dripping from the roof. Grk. *stalagmos*, "a dropping," from *stalazo*, "I drop." The

cones hanging from the roof, like icicles, are called "stalactites"; from Grk. *stalaktos*, "trickling, dropping," also from *stalazo*.

ex-ag-ger-ät-ed (*exaggerated*), lit. *heaped up*; hence, enlarged too much, or beyond the truth. Lat. *ex*, "out," and *agger*, "a heap."

THE BATTLE OF BANNOCKBURN

Of all the Scottish conquests made
By the First Edward's ruthless blade,
 His son retain'd no more,
Northward of Tweed, but Stirling's towers,
Beleaguer'd by King Robert's powers;
 And they took term of truce,
If England's King should not relieve
The siege ere John the Baptist's eve,
 To yield them to the Bruce.
England was roused—on every side
Courier and post and herald hied,
 To summon prince and peer,
At Berwick-bounds to meet their Liege,
Prepared to raise fair Stirling's siege,
 With buckler, brand, and spear.
The term was nigh—they muster'd fast,
By beacon and by bugle-blast
 Forth marshall'd for the field;

There rode each knight of noble name,
There England's hardy archers came,
The land they trode seem'd all on flame,
 With banner, blade, and shield !
And not famed England's powers alone,
Renown'd in arms, the summons own ;
 For Neustria's knights obey'd,
Gascogne had lent her horsemen good,
And Cambria, but of late subdued,
Sent forth her mountain-magnitude,
And Connought pour'd from waste and wood
Her hundred tribes, whose sceptre rude
 Dark Eth O'Connor sway'd.
Right to devoted Caledon
The storm of war rolls slowly on,
 With menace deep and dread ;
So the dark clouds, with gathering power,
Suspend a while the threaten'd shower,
Till every peak and summit lower
 Round the pale pilgrim's head.
Not with such pilgrim's startled eye
King Robert mark'd the tempest nigh !
 Resolved the brunt to bide,
His royal summons warn'd the land,
That all who own'd their King's command,
Should instant take the spear and brand,
 To combat at his side.
O who may tell the sons of fame
That at King Robert's bidding came,
 To battle for the right !

From Cheviot to the shores of Ross,
From Solway-Sands to Marshal's-Moss,
All boun'd them for the fight.

It was on eve of battle-day,
When o'er the Gillie's-hill she rode.
The landscape like a furnace glow'd,
And far as e'er the eye was borne,
The lances waved like autumn-corn.
In battles four, beneath the eye,
The forces of King Robert lie.
And one below the hill was laid,
Reserved for rescue and for aid ;
And three, advanced, form'd vaward-line,
'Twixt Bannock's brook and Ninian's shrine.
Detach'd was each, yet each so nigh
As well might mutual aid supply.
Beyond the Southern host appears
A boundless wilderness of spears,
Whose verge or rear the anxious eye
Strove far, but strove in vain, to spy.
Thick flashing in the evening beam,
Glaives, lances, bills, and banners gleam ;
And where the heaven join'd with the hill,
Was distant armour flashing still,
So wide, so far, the boundless host
Seem'd in the blue horizon lost.
Down from the hill the maiden pass'd,
At the wild show of war aghast ;
And traversed first the rearward host,

Reserved for aid where needed most.
The men of Carrick and of Ayr,
Lennox and Lanark too, were there,
 And all the western land ;
With these the valiant of the Isles
Beneath their Chieftains rank'd their files,
 In many a plaided band.
There, in the centre, proudly raised,
The Bruce's royal standard blazed,
And there Lord Ronald's banner bore
A galley driven by sail and oar.
A wild, yet pleasing contrast, made
Warriors in mail and plate array'd,
With the plumed bonnet and the plaid
 By these Hebrideans worn ;
But O ! unseen for three long years,
Dear was the garb of mountaineers
 To the fair Maid of Lorn !

To centre of the vaward-line
Fitz-Louis guided Amadine.
Arm'd all on foot, that host appears
A serried mass of glimmering spears.
There stood the Marchers' warlike band,
The warriors there of Lodon's land ;
Ettrick and Liddell bent the yew,
A band of archers fierce, though few ;
The men of Nith and Annan's vale,
And the bold Spears of Teviotdale ;—
The dauntless Douglas these obey,

And the young Stuart's gentle sway.
North-eastward by Saint Ninian's shrine,
Beneath fierce Randolph's charge, combine
The warriors whom the hardy North
From Tay to Sutherland sent forth.
The rest of Scotland's war-array
With Edward Bruce to westward lay,
Where Bannock, with his broken bank
And deep ravine, protects the flank.
Behind them, screen'd by sheltering wood,
The gallant Keith, Lord Marshal, stood :
His men-at-arms bear mace and lance,
And plumes that wave, and helms that glance.
Thus fair divided by the King,
Centre, and right, and left-ward wing,
Composed his front ; nor distant far
Was strong reserve to aid the war.

It was a night of lovely June,
High rode in cloudless blue the moon,
 Demayet smiled beneath her ray ;
Old Stirling's towers arose in light,
 And, twined in links of silver bright,
Her winding river lay.
Ah ! gentle planet ! other sight
Shall greet thee, next returning night,
Of broken arms and banners tore,
And marshes dark with human gore,
And piles of slaughter'd men and horse,
And Forth that floats the frequent corse,

And many a wounded wretch to plain
Beneath thy silver light in vain !
But now, from England's host the cry
Thou hear'st of wassail revelry,
While from the Scottish legions pass
The murmur'd prayer, the early mass !—
Here, numbers had presumption given ;
There, bands o'er-match'd sought aid from Heaven.

On Gillie's-hill, whose height commands
The battle-field, fair Edith stands,
With serf and page unfit for war,
To eye the conflict from afar.

O ! with what doubtful agony
She sees the dawning tint the sky !—
Now on the Ochils gleams the sun,
And glistens now Demayet dun ;

Is it the lark that carols shrill ?

Is it the bittern's early hum ?

No !—distant, but increasing still,
The trumpet's sound swells up the hill,

With the deep murmur of the drum.
Responsive from the Scottish host,
Pipe-clang and bugle-sound were toss'd,
His breast and brow each soldier cross'd,

And started from the ground ;
Arm'd and array'd for instant fight,
Rose archer, spearman, squire and knight,
And in the pomp of battle bright

The dread battalia frown'd.

Now onward, and in open view,
The countless ranks of England drew,
Dark rolling like the ocean-tide,
When the rough west hath chafed his pride,
And his deep roar sends challenge wide

To all that bars his way !

In front the gallant archers trode,
The men-at-arms behind them rode,
And midmost of the phalanx broad

The Monarch held his sway.

Beside him many a war-horse fumes,
Around him waves a sea of plumes,
Where many a knight in battle known,
And some who spurs had first braced on,
And deem'd that fight should see them won,

King Edward's hests obey.

De Argentine attends his side,
With stout De Valence, Pembroke's pride,
Selected champions from the train,
To wait upon his bridle-rein.

Upon the Scottish foe he gazed—

—At once, before his sight amazed,

Sunk banner, spear, and shield ;
Each weapon point is downward sent,
Each warrior to the ground is bent.

“ The rebels, Argentine, repent !

For pardon they have kneel'd.”—

“ Ay !—but they bend to other powers,
And other pardon sue than ours !

See where yon bare-foot Abbot stands,

And blesses them with lifted hands !
Upon the spot where they have kneel'd,
These men will die, or win the field."—
—“Then prove we if they die or win !
Bid Gloster's Earl the fight begin.”

Earl Gilbert waved his truncheon high,
Just as the Northern ranks arose,
Signal for England's archery
To halt and bend their bows.
Then stepp'd each yeoman forth a pace,
Glanced at the intervening space,
And raised his left hand high ;
To the right ear the cords they bring—
—At once ten thousand bow-strings ring,
Ten thousand arrows fly !
Nor paused on the devoted Scot
The ceaseless fury of their shot ;
As fiercely and as fast
Forth whistling came the grey-goose wing
As the wild hailstones pelt and ring
Adown December's blast.
Nor mountain targe of tough bull-hide,
Nor lowland mail that storm may bide ;
Woe, woe to Scotland's banner'd pride,
If the fell shower may last !
Upon the right, behind the wood,
Each by his steed dismounted, stood
The Scottish chivalry ;—
—With foot in stirrup, hand on mane,

Fierce Edward Bruce can scarce restrain
His own keen heart, his eager train,
Until the archers gain'd the plain ;

Then, " Mount, ye gallants free ! "
He cried : and, vaulting from the ground,
His saddle every horsemen found.
On high their glittering crest they toss,
As springs the wild-fire from the moss ;
The shield hangs down on every breast,
Each ready lance is in the rest,

And loud shouts Edward Bruce,—
" Forth Marshal ! on the peasant foe !
We'll tame the terrors of their bow,
And cut the bow-string loose ! "

Then spurs were dash'd in chargers' flanks,
They rush'd among the archer ranks,
No spears were there the shock to let,
No stakes to turn the charge were set,
And how shall yeoman's armour slight
Stand the long lance and mace of might ?
Or what may their short swords avail
'Gainst barbed horse and shirt of mail ?
Amid their ranks the chargers sprung,
High o'er their heads the weapon swung,
And shriek and groan and vengeful shout
Give note of triumph and of rout !
A while, with stubborn hardihood,
Their English hearts the strife made good.
Borne down at length on every side,

Compell'd to flight, they scatter wide.—
Let stags of Sherwood leap for glee,
And bound the deer of Dallom-Lee !
The broken bows of Bannock's shore
Shall in the greenwood ring no more !
Round Wakefield's merry May-pole now,
The maids may twine the summer bough,
May northward look, with longing glance,
For those that wont to lead the dance,
For the blithe archers look in vain !
Broken, dispersed, in flight o'erta'en,
Pierced through, trod down, by thousands slain,
They cumber Bannock's bloody plain.

The King with scorn beheld their flight.
“Are these,” he said, “our yeomen wight ?
Each braggart churl could boast before
Twelve Scottish lives his baldric bore !
Fitter to plunder chase or park,
Than make a manly foe their mark.—
Forward, each gentleman and knight !
Let gentle blood show generous might,
And chivalry redeem the fight !”
To rightward of the wild affray,
The field show'd fair and level way ;
But, in mid-space, the Bruce's care
Had bored the ground with many a pit,
With turf and brushwood hidden yet,
That form'd a ghastly snare.
Rushing, ten thousand horsemen came,

With spears in rest, and hearts on flame,
That panted for the shock !
With blazing crests and banners spread,



And trumpet-clang and clamour dread,
The wide plain thunder'd to their tread,
As far as Stirling rock.

Down ! down ! in headlong overthrow,
Horseman and horse, the foremost go,

Wild floundering on the field !
The first are in destruction's gorge,
Their followers wildly o'er them urge ;—

The knightly helm and shield,
The mail, the acton, and the spear,
Strong hand, high heart, are useless here !
Loud from the mass confused the cry
Of dying warriors swells on high,
And steeds that shriek in agony !
They came like mountain-torrent red,
That thunders o'er its rocky bed ;
They broke like that same torrent's wave
When swallow'd by a darksome cave.
Billows on billows burst and boil,
Maintaining still the stern turmoil,
And to their wild and tortured groan
Each adds new terrors of his own !

Too strong in courage and in might
Was England yet, to yield the fight.

Her noblest all are here ;
Names that to fear were never known,
Bold Norfolk's Earl De Brotherton,
And Oxford's famed De Vere.
There Gloster plied the bloody sword,
And Berkley, Grey, and Hereford,
Bottetourt and Sanzavere,
Ross, Montague, and Mauley, came,

And Courtenay's pride and Percy's fame—
Names known too well in Scotland's war,
At Falkirk, Methven, and Dunbar,
Blazed broader yet in after years,
At Cressy red and fell Poitiers.

Pembroke with these, and Argentine,
Brought up the rearward battle-line.

With caution o'er the ground they tread,
Slippery with blood and piled with dead,
Till hand to hand in battle set,
The bills with spears and axes met,
And closing dark on every side,
Raged the full contest far and wide.

Then was the strength of Douglas tried,
Then proved was Randolph's generous pride,
And well did Stewart's actions grace
The sire of Scotland's royal race !

Firmly they kept their ground ;
As firmly England onward press'd,
And down went many a noble crest,
And rent was many a valiant breast,
And Slaughter revell'd round.

Unflinching foot 'gainst foot was set,
Unceasing blow by blow was met ;

The groans of those who fell
Were drown'd amid the shriller clang
That from the blades and harness rang,
And in the battle-yell.

Yet fast they fell, unheard, forgot,

Both Southern fierce and hardy Scot;
And O ! amid that waste of life,
What various motives fired the strife !
The aspiring Noble bled for fame,
The Patriot for his country's claim ;
This Knight his youthful strength to prove,
And that to win his lady's love ;
Some fought from ruffian thirst of blood,
From habit some, or hardihood.
But ruffian stern, and soldier good,
 The noble and the slave,
From various cause the same wild road,
On the same bloody morning, trode,
 To that dark inn, the grave !

The tug of strife to flag begins,
Though neither loses yet nor wins.
High rides the sun, thick rolls the dust,
And feebler speeds the blow and thrust.
Douglas leans on his war-sword now,
And Randolph wipes his bloody brow ;
Nor less had toil'd each Southern knight,
From morn till mid-day in the fight.
Strong Egremont for air must gasp,
Beauchamp undoes his vizor-clasp,
And Montague must quit his spear,
And sinks thy falchion, bold De Vere !
The blows of Berkley fall less fast,
And gallant Pembroke's bugle-blast
 Hath lost its lively tone ;

Sinks, Argentine, thy battle-word,
And Percy's shout was fainter heard,—
“ My merry-men, fight on ! ”

Bruce, with the pilot's wary eye,
The slackening of the storm could spy.
“ One effort more, and Scotland's free !
Lord of the Isles, my trust in thee
Is firm as Ailsa Rock ;
Rush on with Highland sword and targe,
I, with my Carrick spearmen, charge ;
Now, forward to the shock ! ”
At once the spears were forward thrown,
Against the sun the broadswords shone ;
The pibroch lent its maddening tone,
And loud King Robert's voice was known—
“ Carrick, press on—they fail, they fail !
Press on, brave sons of Innisgail,
The foe is fainting fast !
Each strike for parent, child, and wife,
For Scotland, liberty, and life,—
The battle cannot last ! ”

The fresh and desperate onset bore
The foes three furlongs back and more,
Leaving their noblest in their gore.

Alone, De Argentine
Yet bears on high his red-cross shield,
Gathers the relics of the field,
Renews the ranks where they have reel'd,
And still makes good the line.

Brief strife, but fierce,—his efforts raise
A bright but momentary blaze.
Fair Edith heard the Southron shout,
Beheld them turning from the rout,
Heard the wild call their trumpets sent,
In notes 'twixt triumph and lament.
That rallying force, combined anew,
Appear'd in her distracted view
 To hem the Islesmen round ;
“ O God ! the combat they renew,
 And is no rescue found ?
And ye that look thus tamely on,
And see your native land o'erthrown,
Oh ! are your hearts of flesh or stone ?

The multitude that watch'd afar,
Rejected from the ranks of war,
Had not unmoved beheld the fight,
When strove the Bruce for Scotland's right ;
Each heart had caught the patriot spark,
Old man and stripling, priest and clerk,
Bondsman and serf ; even female hand
Stretch'd to the hatchet or the brand ;
But, when mute Amadine they heard
Give to their zeal his signal-word,
 A frenzy fired the throng ;—
“ Portents and miracles impeach
Our sloth—the dumb our duties teach—
And he that gives the mute his speech,
 Can bid the weak be strong.

To us, as to our lords, are given
A native earth, a promised heaven ;
To us, as to our lords, belongs
The vengeance for our nation's wrongs ;
The choice, 'twixt death or freedom, warms
Our breasts as theirs—To arms ! to arms ! ”
To arms they flew,—axe, club, or spear,—
And mimic ensigns high they rear,
And, like a banner'd host afar,
Bear down on England's wearied war.

Already scatter'd o'er the plain,
Reproof, command, and counsel vain,
The rearward squadrons fled amain,
Or made but doubtful stay ;—
But when they mark'd the seeming show
Of fresh and fierce and marshall'd foe,
The boldest broke array.
O give their hapless prince his due !
In vain the Royal Edward threw
His person 'mid the spears,
Cried “ Fight ! ” to terror and despair,
Menaced, and wept, and tore his hair,
And cursed their caitiff fears ;
Till Pembroke turn'd his bridle rein,
And forced him from the fatal plain.

[De Argentine rode with them till the King was safe out of the field. He then returned, seeking to meet Bruce in single combat, but, after overthrowing several knights, was himself seriously wounded.]

Now toil'd the Bruce, the battle done,

To use his conquest boldly won ;
And gave command for horse and spear
To press the Southron's scatter'd rear,
Nor let his broken force combine,
—When the war-cry of Argentine
Fell faintly on his ear ;
“ Save, save his life,” he cried, “ O save
The kind, the noble, and the brave ! ”
The squadrons round free passage gave,
The wounded knight drew near ;
He raised his red-cross shield no more,
Helm, cuish, and breastplate stream'd with gore,
Yet, as he saw the King advance,
He strove even then to couch his lance—
The effort was in vain !
The spur-stroke fail'd to rouse the horse ;
Wounded and weary, in mid course
He stumbled on the plain.
Then foremost was the generous Bruce
To raise his head, his helm to loose ;—
“ Lord Earl, the day is thine !
My sovereign's charge, and adverse fate,
Have made our meeting all too late :
Yet this may Argentine,
As boon from ancient comrade, crave—
A Christian's mass, a soldier's grave.”

Bruce press'd his dying hand—its grasp
Kindly replied ; but, in his clasp,
It stiffen'd and grew cold—

“ And, O farewell ! ” the victor cried,
 “ Of chivalry the flower and pride,
 The arm in battle bold,
 The courteous mein, the noble race,
 The stainless faith, the manly face ! —
 Bid Ninian’s convent light their shrine,
 For late-wake of De Argentine.
 O’er better knight on death-bier laid,
 Torch never gleam’d nor mass was said ! ”

Nor for De Argentine alone,
 Through Ninian’s church these torches shone,
 And rose the death-prayer’s awful tone.
 That yellow lustre glimmer’d pale,
 On broken plate and bloodied mail,
 Rent crest and shatter’d coronet,
 Of Baron, Earl, and Banneret ;
 And the best names that England knew
 Claim’d in the death-prayer dismal due.

Yet mourn not, Land of Fame !
 Though ne’er the Leopards on thy shield
 Retreated from so sad a field,

Since Norman William came.
 Oft may thine annals justly boast
 Of battles stern by Scotland lost ;

Grudge not her victory,
 When for her freeborn rights she strove ;
 Rights dear to all who freedom love,
 To none so dear as thee !

SCOTT.

cōn-quests	mount'-ain-eer'	un-flinch-ing
sub-dued' (-dryūd')	o'er-matched	slaugh'-ter (slō-)
mēn-ace	chāl-lenge	court'-e-ous
hor-iz-on	ārch-er-y	mō-ment-ar-y
a-ghāst	dis-mount'-ed	dis-tract-ed
trā-versed	vēnge-fil	re-treat'-ed
siege (sēj)	liege (léj)	re-lieve (-lēv)

rūth-less, pitiless, cruel; without ruth, or pity.

be-leagu'ered (-lēg-), besieged.

Germ. *belagern*, "to place one's camp (*lager*) by (*be*)."

term of truce. A truce in this term, or condition, was agreed to between Sir Edward Bruce, the King's brother, and Sir Philip Mowbray, the English governor of Stirling. King Robert was displeased at the treaty because it gave England time to bring up a large army of relief, thus forcing on a decisive trial of strength for which he was not prepared.

John the Baptist's eve. Mid-summer eve; evening of June 23.

Cambria, Wales.

de-vōt-ed, doomed, set apart (for destruction). Lat. *de*, "down," and *votum*, "to vow, or wish."

boun'd, prepared, made ready.—

Usually, only the participle is used: "bound for New York."

vā-ward, van-ward, van-guard, front line of division.

sér-ried, close, compact. French *serré*.

plān-et, a star that moves round the sun. Grk. *planetes*, "a wanderer;" because the planets, in their course round the sun, appear to wander among the other stars.

wās-sail (wās-dl), rē-vel-ry, making merry in a very free manner, especially with drinking. "Wassail" is *wæs hæl*, "be hale, whole, or of good health," the old English salutation on pledging one to drink.

pre-sump-tion, forwardness, over-boldness, unjustifiable self-confidence. Lat. *præ*, "before," and *sumptum*, "to take."

cōn-flict, struggle, battle. Lat.

con, “together,” and *figo*, “I strike, or dash.”

re-spōn-sire, replying, in answer.

Lat. *re*, “back, again,” and *sponsum*, “to promise.”

bat-tal-ia, battalions; ranks in battle array. French *battre*, “to strike.”

phá-lanx, or *phál-anx*, compact mass in battle array. The famous “phalanx” of the Greeks was the compact formation of infantry in files usually eight deep (though often much deeper).

trūn-cheon (-*shon*), a short staff, or baton. French *tronçon*, “a stump, broken piece,” from Lat. *truncare*, “to cut short, lop off.”

chiv-al-ry (*shir-*), knighthood, body of knights; here, in the literal sense, horsemen generally, cavalry. French *chevalerie*, from *cheval*, “a horse.”

the shock to *let*, to hinder, prevent, resist.

yeó-man (*yó-*), countryman, farmer; a man of small estate.

wight (*wit*), sprightly, vigorous.

charl, countryman, fellow.

Old English “ceorl,” Scotch “carl.”

bald-ric (*bōld-ric*), belt, girdle (of a soldier).

ac-ton, a leather (or taffeta) vest, quilted, worn under the coat of mail, to prevent bruises. It derives its name from having been originally padded with *cotton*.

ris-or, or *ris-or*, the movable part of the helmet that covers the face. French *risière*, “sight,” and “visor,” from Lat. *risum*, “to see;” because holes are pierced in it, to see through.

fal-chion (*fōl-shon*), a small crooked, sickle-shaped sword, Ital. *falcione*, from Lat. *falx*, “a sickle.”

pi-broc'h (*pé-broc'h*), the music of the bag-pipes.

frén-zy, uncontrollable agitation, wild excitement. French *frénésie*, Grk. *phrenésis*, from *phrén*, “the mind.”

cai'-tiff (*có-*), base, cowardly. Ital. *cattivo*, Lat. *captiūs* (“a captive”), from *captum*, “to take, capture.”

cuish (*kwish*), armour to protect the thighs; originally, of buff leather, later, of plate iron or steel. French *cuisse*, Lat. *coxa*, “the hip.”

MATTER INDESTRUCTIBLE.

A COMMON tallow candle or wax taper supplies an instructive illustration of some of the changes incident to matter. The tallow or wax, being liquefied by heat, rises between the filaments of the wick, until, coming near to the flame, it is vaporized. From a state of vapour, it very rapidly passes into the condition of gas, and as gas, it yields a continuous flame and a brilliant light. When the process of combustion is at an end, we say, in common language, "the candle is burnt out," and all that remains, visible to our senses, is—a few fragments of charred wick, which have been collected in the snuffers.

Under careful management, the whole of the tallow or wax may be consumed, leaving in the snuffers only a very small portion of the wick. But what has become of the wax? It has disappeared, but not one particle of it has been wasted or destroyed. So far as our eyes are concerned, certainly it is lost; but so is the ship which sails away on the sea, and yet we know that the ship still exists though we do not see it; and so the lump of sugar appears to be lost when we put it into a cup of hot tea, and yet we know that the sugar is not really lost, because the tea is made sweet.

A very simple experiment will show us clearly what has become of the taper. Let us burn it in a clean

glass bottle with a narrow neck. Now after it has burnt for a few minutes we notice that the flame grows less and less, and in a short time the taper goes out. We next have to discover the reason why the taper goes out. For this purpose let us see whether the air in the bottle is now the same as it was before the candle was burnt. How can we tell this? Let us pour some clear lime-water—made by letting a piece of fresh lime stand in water, and shaking it up, and then letting the water get clear again,—first into a bottle filled with air in which no candle has burnt, and then into the one in which our taper burnt. You see the difference at once! In the first bottle the lime-water remains clear, in the second it becomes at once milky. Hence we see that the air has been changed in some way by the burning of the taper. This milkiness is nothing else than chalk, and chalk is made up of lime and carbonic acid. Carbonic acid is, like common air, a colourless invisible gas, which we cannot see, but which we find turns the lime-water milky, and puts out a burning taper. Part of the wax has been changed by burning into this carbonic acid gas; that is, the carbon or charcoal of the burnt wax is to be found again in this invisible gas. Some of this carbon you may notice going away unburnt as smoke or soot; and if you quickly press a sheet of white paper on to the flame so as not to burn the paper, you will see that it becomes stained with a black ring of soot or carbon.



But besides carbonic acid gas there is another substance formed when the candle burns—namely, water. You may perhaps think it strange that water is formed in the hot flame. Still a simple experiment will show you that this is really the case. If water comes off from the flame, it will be in the state of hot steam, which you cannot see, for what we commonly call steam coming out of the boiling kettle is not steam, but fine drops of water; and if you had a glass kettle, and could look inside it, you would see nothing above the boiling water, because steam is an invisible gas like carbonic acid and common air. Now as the steam from the kettle becomes small drops of water when it cools, so the hot air coming from the burning taper, if it contains steam, must deposit the steam in the form of drops of water when it is cooled. All we need to do to see whether steam is given off from a burning candle, is to hold



a cold, dry, bright glass, such as a tumbler, over the flame of our taper. You see that the bright glass is at once dimmed, and, if you look carefully, you will notice the little drops of water which bedew the inside of the glass. If we went on for some time, and if we so arranged the experiment as to keep the glass always cool, we could get a wine-glass full of water by burning a candle, and the water thus got is like all other pure and good water, except that it may perhaps taste a little of soot.

Let us now look back as to what we have learnt about our candle burning. We have learnt—

1. That the candle soon goes out if it be burnt in a bottle of air.
2. That a colourless invisible gas called carbonic acid is formed in the bottle after the candle has burnt.
3. That the carbonic acid gas comes from the carbon or soot contained in the wax.
4. That water is also formed when the candle burns.

We therefore have learnt that the wax of the candle has not been destroyed or lost, but that it has changed its form and has been converted into carbonic acid and water.

What has been said respecting a candle may be viewed as applicable, with but slight alterations, to an oil-lamp, and a wood or coal fire. In the two latter, we commonly observe the liberation of great quantities of smoke, and hence we have less difficulty in accounting for the dissipation of the particles of fuel. But in those cases, a portion only of the combustible materials passes off in a visible form. A fire, whether it be for domestic or manufacturing purposes, always implies the union of some portions of the inflammable materials with certain portions of the surrounding atmosphere, constituting new compounds, which may be collected separately and examined.

The changes thus briefly hinted at, are only a very small part of what are constantly going on around us. In the vegetable world, these changes, by their rapid

succession, are strikingly apparent. A few simple elements, blended in different proportions, make up the vast variety of herbs and flowers, of fruits and trees, that adorn the surface of the earth. Whilst some tender plant springs up in the morning and withers before night, the oak of the forest resists the blasts of a hundred winters. Yet the sturdy oak, in all its grandeur, is not exempt from changes, nor could it exist without them. Its leaves periodically fall off, and, as we are accustomed to say, rot; but this rottenness is necessary for the complete separation of the elements of which those leaves are composed, previous to their reappearance, under some new form, in connexion with the mineral, vegetable, or animal creation.

The seed cast into the earth dies, but during the progress of its decay it protects, nourishes, and invigorates, the germ of a new plant that springs forth from its ruins. In these, and the greater proportion of changes with which we are familiar, air and water co-operate. The elements of which vegetables and animals are composed, belong for the most part to that class of matter denominated aeriform or gaseous. Air and water hold a distinguished place among these elements, and are rendered alike subservient to vitality and to decomposition.

“ Few things appear more incomprehensible than the constant production and reabsorption of matter. An animal falls to the ground and dies; myriads of creatures are now summoned by a call, by an impulse of which we have no perception, to remove it, and prepare it for

a new combination. Chemical agencies, fermentation and solution, immediately commence their actions to separate the parts, and in a short time nothing remains but the framework or bones, perhaps a little hair, or some wool, and all the rest is departed we know not whither! Worms and insects have done their parts; the earth has received a portion, and the rest, converted into gases, and exhalable matters, has dispersed all over the region, which, received into vegetable circulation, is again separated and changed, becomes modified anew, and nourishes that which is to continue the future generations of life. The petal of the rose; the pulp of the peach; the azure and gold on the wing of the insect; all the various productions of the animal and vegetable world; the very salts and compounds of the soil, are but the changes some other matters have undergone which have circulated through innumerable channels since the first production of all things, and no particle has been lost."

Saturday Magazine and PROFESSOR ROSCOE's
Chemistry Primer (adapted).

<i>con-tin-ū-ous</i>	<i>brill-i-ant</i>	<i>man-age-ment</i>
<i>ex-trēm-i-ty</i>	<i>vis-i-ble</i>	<i>ob-serv-ā-tion</i>
<i>sur-round'-ing</i>	<i>in-vis-i-ble</i>	<i>lib-er-ā-tion</i>
<i>ec-đ-nom-y</i>	<i>col -our-less (cūl-)</i>	<i>dis-sip-ā-tion</i>
<i>ex-pér-i-ment</i>	<i>dē-cōm-pos-i-tion</i>	<i>man-ū-fac-tür-ing</i>
<i>al-ter-ā-tions</i>	<i>in-cōm-prē-hens-i-ble</i>	<i>de-nōm-in-āt-ed</i>

<i>in-cid-ent</i> , falling to, belonging to. Lat. <i>in</i> , "upon," and <i>cado</i> , "I fall."	<i>in-vig-or-ate</i> , put vigour into, strengthen. Lat. <i>vigor</i> , from <i>vigére</i> , "to be lively, to thrive."
<i>li-que-fied</i> , melted, turned into liquid form. Lat. <i>liqueo</i> , "I melt."	<i>co-öp-er-ate</i> , work together, helping each other. Lat. <i>co</i> , "together," and <i>opero</i> , "I work."
<i>fil-a-ments</i> , threads, fibres. Lat. <i>filum</i> , "a thread."	<i>a-ér-i-form</i> , in the form, or condition, of air; airlike.
<i>vá-por-ized</i> , turned into vapour, or steam. Lat. <i>vapor</i> .	<i>sub-sérv-i-ent</i> , ministering to, serving as an instrument to further the purposes of. Lat. <i>sub</i> , "under," and <i>servio</i> , "I serve."
<i>com-bust-ion</i> , burning up. Lat. <i>com</i> , "together, wholly," and <i>(b)ustum</i> , "to burn."	<i>vít-ál-i-ty</i> , life-force, power of life.
<i>com-büst-i-ble</i> , of a nature to take fire and burn up.	<i>rë-ab-sòrp-tion</i> , drinking in, or sucking up, again. Lat. <i>re</i> , "back, or again," <i>ab</i> , "from, or away," and <i>sorbeo</i> , "I suck in, swallow."
<i>ë-lude</i> , escape, evade. Lat. <i>eludo</i> , "I mock, deceive;" from <i>e</i> , "out," and <i>ludo</i> , "I play."	<i>mýr-i-ads</i> , countless numbers.
<i>prë-cise</i> , exact, particular. Lat. <i>præ</i> , "before," and <i>cæsum</i> , "cut;" nicely cut or trimmed.	<i>ex-hál-a-ble</i> , capable of being evaporated, or passed off as vapour. Lat. <i>ex</i> , "out," and <i>halo</i> , "I breathe."
<i>in-flàm-ma-ble</i> , ready to catch fire. Lat. <i>in</i> , and <i>flamma</i> , "flame."	
<i>pë-ri-od-ic-al-ly</i> , at fixed periods or intervals.	

THROWING AWAY THE CORKS.

As a schoolmaster was walking upon the bank of a river not far from his school, he heard a cry as of one in distress. Advancing a few paces farther, he saw one

of his scholars in the water, hanging by the bough of a willow. The boy had, it seems, been learning to swim with corks; and now, thinking himself sufficiently



experienced, had thrown the corks aside, and ventured into the water without them. The force of the stream, however, had hurried him out of his depth, and he would certainly have been drowned, had not the branch

of willow, which grew on the bank, happened by good fortune to hang in his way. The master took up the corks, which lay upon the ground, and, throwing them to the scholar, made use of this opportunity to talk to him about the thoughtless rashness of youth. "Let this be an example to you," says he, "in the conduct of your future life, never to throw away your corks till time has given you strength and experience enough to swim without them."

ÆSOP.

THE HIGHLAND HILLS.

1.—THEIR GENERAL CHARACTER.

THE Highland mountains occupy but a very subsidiary position among the great mountain ranges of the earth. The highest peak in which they culminate does not reach the line of perpetual snow. No avalanche thunders over their precipices to bury the villages at their base in ruins; no glacier brings eternal Winter down from his elevated throne into the midst of green cornfields and cultivated valleys, or yawns in dangerous crevasses across the traveller's path; no volcano reddens the horizon with its lurid smoke and flame. Ages innumerable have passed away since the glacier flowed down their sides, and left its polished or striated marks on the rocks, to be deciphered by the skill of the geologist; and those hills which once passed through a fiery ordeal, and poured their volcanic floods over the

surrounding districts, now form the firmest foundations of the land, and afford quiet grassy pasturages for the sheep. Our mountains, indeed, possess few or none of those sublime attributes which invest the lofty ranges of other lands with gloom and terror. Their very storms are usually subdued, as if in harmony with their humbler forms. Though they tower to the sky, they seem nearer to the familiar earth ; and a large share of the beauty and verdure of the plains do they lift up with them in their rugged arms for the blessing of heaven. Every part of their domains is free and open to the active foot of the wanderer. There are few or no inaccessible precipices or profound abysses to form barriers in his way. He can plant his foot on their highest summits with little expenditure of breath and toil ; and a few hours will bring him from the stir and tumult of life in the heart of the populous city to their loneliest and wildest recesses. Well do I know and love my native hills ; for I have spent some of the happiest days of my life in wandering amid their solitudes, following my fancies fearlessly wherever they led me. I have seen them in all seasons, and in all their varied aspects :—in the dim dawn, when, swathed in cold dark clouds, they seemed like awful countenances veiled, yet speaking in the tongues of a hundred unseen waterfalls ; in the still noon-day, when, illumined with sunshine, every cliff and scar on their sides stood out distinctly and prominently against the pure clear sky ; at sunset, when, amid the masses of burnished gold that lay piled up in the west—the glow of fire that burns

without consuming—they seemed like the embers of a universal conflagration; in the holy twilight, when they appeared to melt into the purple beauty of a dream, and the golden summer moon and the soft bright star of eve rose solemnly over their brows, lighting them up with a mystical radiance; and in the lone dark waste of midnight, when from lake and river the long trailing mists crept up their sides without hiding their far-off summits, on which twinkled, like earth-lighted watch-fires, a few uncertain stars. I have gazed upon them in the beauty of summer, when the heather was in full bloom, and for miles they glowed in masses of the loveliest purple; in the changing splendour of autumn, when the deep green of the herbage gave place to the russet hues of the fading flowers, the rich orange of the ferns, and the dark brown of the mosses; and in the dreary depth of winter, when storms during the whole twilight-day howled around them, or when, robed from foot to crown in a garment of the purest snow, they seemed meet approaches to “the great white Throne.” In all these aspects they were beautiful, and in all they excited thoughts and emotions which no human language could adequately express.

<i>per-pèt-ü-al</i>	<i>è-lev-ät-ed</i>	<i>gë-ò-log-ist (-loj-)</i>
<i>prè-cip-ice</i>	<i>cùl-tiv-ät-ed</i>	<i>pàs-tür-age (-tyür-)</i>
<i>ë-tèr-nal</i>	<i>ðc-cup-y (-kyüp-)</i>	<i>ex-pènd-i-ture</i>
<i>vol-cá-no</i>	<i>dán-ger-ous</i>	<i>sòl-i-tudes</i>
<i>vol-càn-ic</i>	<i>hor-íz-on</i>	<i>prò-min-ent-ly</i>
<i>yawns (yōnz)</i>	<i>lóne-li-est</i>	<i>con-fla-grá-tion</i>

sub-sid-i-ar-y, secondary, inferior. Literally, contributing assistance; or forming a reserve. From Lat. *subsidiū*, "support, help; a reserve;" from *subsidō*, "I settle down."

cul-min-ate, come to a point, reach the highest point. Lat. *culmen*, "top, summit."

à-val-anche (-ansh), a great mass of snow or ice sliding down a mountain side to the valley below. French, *avalanche*, from *à val*, Lat. *ad vallem*, "to the valley."

glaciers (*glàs-i-erz*, or *glá-sherz*), fields of ice in the hollows and on the slopes of mountains. Lat. *glacies*, "ice."

crev-àsse, a crack, rent, or deep crevice, in a glacier. Fr. from *crever*, "to burst, split," from Lat. *crepare*, "to crack."

stri-åt-ed, streaked, marked with *striæ* (Lat.), or fine threadlike lines or furrows.

de-ci-phered, spelled out, read and explained.

ôr-dë-al, severe trial.

åt-trib-utes, qualities. Lat. *at (ad)*, "to," and *tributum*, "to give, or ascribe."

vèrd-ure, greenness. Old French, *verd* (*vert*), Lat. *viridis*, "green."

in-ac-cès-si-ble, unapproachable, not to be come up to or reached. Lat. *in*, "not," *ac (ad)*, "to," and *cessum*, "to go."

pro-found', very deep. Fr. *profond*, Lat. *profundus*, from *pro*, "forward," and *fundus*, "bottom."

a-bÿss, a bottomless hole, very deep water. Grk. *a*, "without," and *byssos*, "bottom."

il-lum-ined, lighted up. Lat. *il* (*in*), "in, upon," and *lumen*, "light."

myst-ic-al, suggesting or having a dim religious or spiritual significance.

rá-di-ance, brightness, shining forth in brilliant rays. Lat. *radius*, "a staff, ray, or spoke of a wheel."

åd-é-quate-ly, sufficiently, justly. Lat. *ad*, "to," and *æquare*, "to make equal or just" (Lat. *æquus*).



2.—THE MOUNTAIN TOPS.

Etherealized by the changing splendour of the heavens as the mountain summit appears when surveyed from below, rising up from the huge mound of rock and earth like a radiant flower above its dark foliage, it affords another illustration of the poetic adage, that " 'Tis distance lends enchantment to the view." When you actually stand upon it, you find that the reality is very different from the ideal. The clouds that float over it, "those mountains of another element," which looked from the valley like fragments of the sun, now appear in their true character as masses of cold dull vapour; and the mountain peak, deprived of the transforming glow of light, has become one of the most desolate spots on which the eye can rest. Not a tuft of grass, not a bush of heather, is to be seen anywhere. The earth, beaten hard by the frequent footsteps of the storm, is leafless as the world on the first morning of creation. Huge fragments of rocks, the monuments of elemental wars, rise up here and there, so rugged and distorted that they seem like nightmares petrified; while the ground is frequently covered with cairns of loose hoary stones, which look like the bones which remained unused after nature had built up the great skeleton of the earth, and which she had cast aside in this solitude to blanch and crumble away unseen. When standing there during a misty storm, it requires little effort of imagination to picture yourself a shipwrecked mariner, cast ashore on one of the sublimely barren islands of the Antarctic.

Ocean. You involuntarily listen to hear the moaning of the waves, and watch for the beating of the foaming surge on the rocks around. The dense writhing mists hurrying up from the profound abysses on every side imprison you within "the narrow circle of their ever-shifting walls," and penetrate every fold of your garments, and your skin itself, becoming a constituent of your blood, and chilling the very marrow of your bones. Around you there is nothing visible save the vague vacant sea of mist, with the shadowy form of some neighbouring peak looming through it like the genius of the storm; while your ears are deafened by the howling of the wind among the whirling masses of mist, by "the airy tongues that syllable men's names," the roaring of the cataracts, and the other wild sounds of the desert never dumb. And yet, dreary and desolate although the scene usually appears, it has its own periods of beauty, its own days of brightness and cheerfulness. Often in the quiet autumn noon the eye is arrested by the mute appeal of some lovely Alpine flower, sparkling like a lone star in a midnight sky, among the tufted moss and the hoary lichens, and seeming, as it issues from the stony mould, an emanation of the indwelling life, a visible token of the upholding love which pervades the wide universe. If winter and spring in that elevated region be one continued storm, the short summer of a few weeks' duration seems one enchanting festival of light. The life of earth is then born in "dithyrambic joy," blooms and bears fruit under the glowing sunshine, the balmy breezes, and the rich

dews of a few days. Scenes of life, interest, and beauty are crowded together with a seeming rapidity as if there were no time to lose. Flowers the fairest and the most fragile expand their exquisitely pencilled blossoms even amid dissolving wreaths of snow, and produce an impression all the more delightful and exhilarating from the consciousness of their short-lived beauty, and the contrast they exhibit to the desolation that immediately preceded.

<i>splend-our</i>	<i>āc-tū-al-ly</i>	<i>il-lus-trā-tions</i>
<i>sur-veyed'</i>	<i>rē-āl-i-ty</i>	<i>el-e-mēnt-al</i>
<i>rá-di-ant</i>	<i>night-mares</i>	<i>shīp-wrecked</i>
<i>po-ēt-ic</i>	<i>pēn-e-trate</i>	<i>con-stī-tū-ent</i>
<i>éth-é-al</i>	<i>syl-lab-le</i>	<i>ex-quis-ite-ly</i>
<i>chār-ac-ter</i>	<i>wrīth-ing (rīdh-)</i>	<i>cōn-sci-ous-ness</i>

éthér-é-al-ized, refined, spiritualized, fancifully beautiful and delightful. Literally, made as the ether, or fine clear upper air.

ad-age, an old saying, very commonly repeated, till it has passed into a proverb. Thomas Campbell wrote the line, "Tis distance...view," in *The Pleasures of Hope*.

mōn-ū-ment, a memorial; a structure, or other enduring object, that calls to mind some person or action. Lat. *monumentum*, from *moneo*, "I advise, warn, remind."

dis-tōrt-ed, twisted out of natural shape. Lat. *dis*, "asunder," and *tortum*, "to twist."

pēt-ri-fied, turned into stone. Fr. *pétrifier*, Lat. *petra*, "rock, stone," and *facere*, "to make."

in-vōl-unt-ar-i-ly, apart from, or against, one's will.

cāt-a-ract, waterfall. Grk. *kata*, "down," and *arasso*, "I dash."

lichen (li-ken, or litsh-en), rock or tree moss.

é-man-á-tion, issue, what flows or proceeds from something

(as a source). Lat. *e*, “out,” and *mano*, “I flow, or issue.” **dith-y-ràmb-ic**, wildly excited or enthusiastic. In ancient Greece, the dithyramb was a kind of lyric poetry, of a lofty and often extravagant style; first made in honour of Bacchus.

fràg-ile (*frà-jil*), easily broken, delicate. Lat. *fragilis*, from *frango*, “I break.” “Frail,” is the same word, through the French *frêle*.

ex-hil-ar-àt-ing, cheering, glad-dening. Lat. *ex*, “out,” intensive, and *hilaris*, “joyful, merry.”

3.—A NIGHT ON BEN LAWERS.

Some years ago, while botanizing with a friend over the Breadalbane mountains, we found ourselves, a little before sunset, on the summit of Ben Lawers, so exhausted with our day’s work that we were utterly unable to descend the south side to the inn at the foot. In these circumstances we resolved to bivouac on the hill for the night. On the higher ridge of the hill there is a strange rocky chasm which is popularly known as the “Crater,” from its shape, not, of course, from any volcanic associations. It is strewn with rocks broken up into huge rectangular masses, lying loosely on the top of each other, and leaving large cavernous openings between them. In the thin coating of dark micaceous soil covering the sides and bases of these fallen rocks, the *Saxifraga cernua* grows sparingly. It is a desolate, weird-looking place, where, according to tradition, the “Lady of Lawers,” who several hundred years ago lived at the foot of the hill, and had the reputation of being a witch and a prophetess, folded her cows at night, after

feeding on the slopes of the Ben all day. In this crater-like hollow the sappers and miners of the Ordnance Survey, having to reside there for several months, had constructed square open enclosures, like sheepfolds, to shelter them from the northern blasts. In one of these roofless caravansaries we selected a spot on which to spread our couch. Fortunately, there was fuel conveniently at hand in the shape of bleached fragments of tent-pins and lumps of good English coal, proving that our military predecessors had supplied themselves in that ungenial spot with a reasonable share of the comforts of Sandhurst and Addiscombe. My companion volunteered to kindle a fire, while I went in search of materials for an extemporaneous bed. As heather, which forms the usual spring-mattress of the belated traveller, does not occur on the summits of the higher hills, we were obliged to do without it—much to our regret; for a heather-bed (I speak from experience) in the full beauty of its purple flowers, newly gathered, and skilfully packed close together, in its growing position, is as fragrant and luxurious a couch as any Sybarite could desire. I sought a substitute in the woolly-fringe moss, which I found covering the north-west shoulder of the hill in the utmost profusion. It had this disadvantage, however, that, though its upper surface was very dry and soft, it was, beneath, a mass of wet decomposing peat. My object, therefore, was so to arrange the bed that the dry upper layer would be laid uniformly uppermost; but it was frustrated by the enthusiasm excited by one of the most magnificent sunsets I had ever witnessed.

It caused me completely to forget my errand. The western gleams had entered into my soul, and etherealized me above all creature wants.



Never shall I forget that sublime spectacle ; it brims with beauty even now my soul. Between me and the west, that glowed with unutterable radiance, rose a perfect chaos of wild, dark mountains, touched here

and there into reluctant splendour by the slanting sunbeams. The gloomy defiles were filled with a golden haze, revealing in flashing gleams of light the lonely lakes and streams hidden in their bosom ; while, far over to the north, a fierce cataract that rushed down a rocky hill-side into a sequestered glen, frozen by the distance into the gentlest of all gentle things, reflected from its snowy waters a perfect tumult of glory. I watched in awe-struck silence the going-down of the sun amid all this pomp, behind the most distant peaks—saw the few fiery clouds that floated over the spot where he disappeared fade into the cold dead colour of autumn leaves, and finally vanish in the mist of even—saw the purple mountains darkening into the Alpine twilight, and twilight glens and streams tremulously glimmering far below, clothed with the strangest lights and shadows by the newly risen summer moon. Then, and not till then, did I recover from my trance of enthusiasm to begin in earnest my preparations for the night's rest.

I gathered a sufficient quantity of the moss to prevent our ribs suffering from too close contact with the hard ground ; but, unfortunately, it was now too dark to distinguish the wet peaty side from the dry, so that the whole was laid down indiscriminately. Over this heap of moss we spread a plaid, and lying down with our feet to the blazing fire, Indian fashion, we covered ourselves with another plaid, and began earnestly to court the approaches of the balmy god. Alas ! all our elaborate preparations proved futile ; sleep would not be wooed.

The heavy mists began to descend, and soon penetrated our upper covering, while the moisture of the peaty moss, squeezed out by the pressure of our bodies, exuded from below; so that between the two we might as well have been in "the pack" at Ben Rhydding. To add to our discomfort, the fire smouldered and soon went out with an angry hiss, incapable of contending with the universal moisture. It was a night in the middle of July, but there were refrigerators in the form of two huge masses of hardened snow on either side of us; so the temperature of our bedchamber, when our warming-pan grew cold, may be easily conceived. For a long while we tried to amuse ourselves with the romance and novelty of our position, sleeping, as we were, in the highest attic of her Majesty's dominions, on the very top of the dome of Scotland. We gazed at the large liquid stars, which seemed unusually near and bright; not glimmering on the roof of the sky, but suspended far down in the blue concave, like silver lamps. There were the grand old constellations, Cassiopeia, Auriga, Cepheus, each evoking a world of thought, and painting, as it were, in everlasting colours on the heavens the religion and intellectual life of Greece. Our astronomical musings and the monotonous murmurings of the mountain streams at last lulled our senses into a kind of doze, for sleep it could not be called. How long we lay in this unconscious state we knew not, but we were suddenly startled out of it by the loud whirr and clucking cry of a ptarmigan close at hand, aroused perhaps by a nightmare caused by its last meal of crude whortleberries.

All further thoughts of sleep were now out of the question; so, painfully raising ourselves from our recumbent posture, with a cold grueing shiver, rheumatism racking in every joint, we set about rekindling the fire, and preparing our breakfast.

In attempting to converse, we found, to our dismay, that our voices were gone. We managed, however, by the help of signs, and a few hoarse croaks, to do all the talking required in our culinary conjurings; and, after thawing ourselves at the fire, and imbibing a quantity of hot coffee, boiled, it may be remarked, in a tin vasculum, we felt ourselves in a condition to descend the hill. A dense fog blotted out the whole of creation from our view, except the narrow spot on which we stood; and, just as we were about to set out, we were astonished to hear, far off through the mist, human voices shouting. While we were trying to account for this startling mystery in such an unlikely spot and hour, we were still more bewildered by suddenly seeing, on the brink of the steep rocks above us, a vague, dark shape, magnified by the fog into portentous dimensions. Here, at last, we thought, is the far-famed Spectre of the Brocken, come on a visit to the Scottish mountains. Another, and yet another appeared, with, if possible, more savage mien and gigantic proportions. We knew not what to make of it. Fortunately, our courage was saved at the critical moment by the phantoms vanishing round the rocks to appear before us in a few minutes real botanical flesh and blood, clothed, as usual, with an utter disregard of the æsthetics of dress. The enthusiasm of our new

friends for Alpine plants had caused them to anticipate the sun, for it was yet only three o'clock in the morning.

REV. HUGH MACMILLAN.

<i>ex-haust'-ed</i>	<i>vol-un-teered'</i>	<i>constellátions</i>
<i>pðp-üll-ar-ly</i>	<i>lux-ur'-i-ous</i>	<i>Auríga</i>
<i>cáv-ern-ous</i>	<i>re-lúc-tant</i>	<i>astrondómical</i>
<i>dè-sol-ate</i>	<i>cát-a-ract</i>	<i>whòrtleberries</i>
<i>weird'-look-ing</i>	<i>as-só-ci-á-tions</i>	<i>dimènsions</i>
<i>re-pùt-á-tion</i>	<i>rheu'-mat-ism</i>	<i>enthúsiasm</i>

bot-an-ize, gather specimens of plants.

biv-ou-ac, encamp, camp out, in the open air.

chasm (*kàzm*), deep gap or gulf, yawning space, "cavernous opening." Grk. *chasma*, from *chaino*, "I gape, or open wide."

crá-ter, the bowl-like mouth of a volcano. Grk. *crater*, "bowl, goblet," from a verb signifying "to mix;" lit. a mixing-vessel.

strewn, scattered hither and thither.

rectángular (*rect-ång-gyüll-ar*), right-angled; having each side at right angles to the sides next it. Lat. *rectus*, "right, straight," and *angulus*, "angle, corner."

mi-cá-ceous, full of mica—a well-known mineral, which

readily breaks up into thin glistening plates or scales. Lat. *micare*, "to sparkle, gleam."

tra-di-tion, report or story handed down, from mouth to mouth, from ancient times. Lat. *trado*, "I deliver, hand over," from *tra* (*trans*), "over, across," and *do*, "I give."

car-a-vàn-sar-y, a station for caravans; place where caravans stop, and the camels are unloaded, for the night.

un-gén-i-al (-jén-), not genial, not pleasant and comfortable. Lat. *genius*, "the spirit of social enjoyment."

ex-tem-por-án-e-ous, got up on the spur of the moment.

be-lát-ed, delayed too long, rendered very late or too late, benighted.

syb-ar-ite, effeminate, luxurious person; lit. an inhabitant of Sybaris, a town of ancient Italy, which had a reputation for voluptuous pleasure-loving ease.

chá-os (*ká-os*), space, open blank space; hence a confused disorderly mass. Grk. *chaos*, "space," from same root as *chaino*, *chasma* (above), meaning "to gape or open wide."

dé-file, a long narrow pass or gorge, such as troops could march through only by *defiling*—that is, by forming in a narrow long line, like a *thread*. Lat. *filum*, "a thread."

se-quest-ered, lying apart, lonely.

trém-ul-ous-ly, with a trembling or quivering motion. Lat. *tremo*, "I tremble."

in-dis-crim-in-ate-ly, without distinguishing (one side from the other), confusedly, anyhow.

fu'tile, useless, vain, of no effect. Lat. *futilis*, "ready to pour out, that cannot contain, not to be relied on, worthless," from *fundo*, "I pour."

ex-ude, ooze out.

re-frig-er-ätors (-*frij-*), coolers. Lat. *re*, "again," and *frigeratum*, "to cool," from *frigus*, "coldness."

ë-vók-ing, calling forth. Lat. *e*, "out," and *voco*, "I call." *mon-ò-ton-ous*, of one single tone, of unvarying note. Grk. *monos*, "alone, only," and *tonos*, "tone, note."

ptär-mi-gan (*tär-*), a kind of grouse.

re-cumb-ent, lying back or down, reclining. Lat. *re*, "back," and *cumbo*, "I lie." *grué-ing* (*grú-*), shuddering; causing or accompanying a miserable feeling.

The Brocken is the highest summit of the Hartz mountains in Prussia. Occasionally at sunrise or sunset, when the summit is clear, and the mists rise from the valley, the shapes of objects on the mountain are projected by the sun against the opposite mass of fog, and appear magnified to a monstrous size. Hence the popular fancy that the place was haunted by a spectre.

æs-thèt-ics (*ës-*), rules of good taste in art. Grk *aisthànomai*, "I perceive."

Describe this incident in your own words.



SCENERY IN SKYE.

WITH these rude seas, in weary plight,
They strove the livelong day and night,
Nor till the dawning had a sight

Of Skye's romantic shore.

Where Coolin stoops him to the west,
They saw upon his shiver'd crest

The sun's arising gleam;
But such the labour and delay,

Ere they were moor'd in Scavigh bay,
(For calmer Heaven compell'd to stay,)

He shot a western beam.

Then Ronald said, " If true mine eye,
These are the savage wilds that lie
North of Strathnardill and Dunskye ;

No human foot comes here,
And, since these adverse breezes blow,
If my good Liege love hunter's bow,
What hinders that on land we go,

And strike a mountain-deer ? "

Then each took bow and bolts in hand,
Their row-boat launch'd and leapt to land,
And left their skiff and train,
Where a wild stream with headlong shock,
Came brawling down its bed of rock,
To mingle with the main.

A while their route they silent made,
As men who stalk for mountain-deer,
Till the good Bruce to Ronald said,—

" Saint Mary ! what a scene is here !
I've traversed many a mountain-strand,
Abroad and in my native land,
And it has been my lot to tread
Where safety more than pleasure led ;
Thus, many a waste I've wander'd o'er,
Clombe many a crag, cross'd many a moor,

But, by my halidome,
A scene so rude, so wild as this,

Yet so sublime in barrenness,
Ne'er did my wandering footsteps press,
Where'er I happ'd to roam."

No marvel thus the Monarch spake ;
For rarely human eye has known
A scene so stern as that dread lake,
With its dark ledge of barren stone.
Seems that primeval earthquake's sway
Hath rent a strange and shatter'd way
Through the rude bosom of the hill,
And that each naked precipice,
Sable ravine, and dark abyss,
Tells of the outrage still.
The wildest glen, but this, can show
Some touch of Nature's genial glow ;
On high Benmore green mosses grow,
And heath-bells bud in deep Glencoe,
And copse on Cruchan-Ben ;
But here,—above, around, below,
On mountain or in glen,
Nor tree, nor shrub, nor plant, nor flower,
Nor aught of vegetative power,
The weary eye may ken.
For all is rocks at random thrown,
Black waves, bare crags, and banks of stone,
As if were here denied
The summer sun, the spring's sweet dew,
That clothe with many a varied hue
The bleakest mountain-side.

And wilder, forward as they wound,
Were the proud cliffs and lake profound.

Huge terraces of granite black
Afforded rude and cumber'd track;

For from the mountain hoar,
Hurl'd headlong in some night of fear,
When yell'd the wolf and fled the deer,

Loose crags had toppled o'er;
And some, chance-poised and balanced, lay,
So that a stripling arm might sway

A mass no host could raise,
In Nature's rage at random thrown,
Yet trembling like the Druid's stone

On its precarious base.
The evening mists, with ceaseless change,
Now clothed the mountains' lofty range,

Now left their foreheads bare,
And round the skirts their mantle furl'd,
Or on the sable waters curl'd,
Or on the eddying breezes whirl'd,

Dispersed in middle air.
And oft, condensed, at once they lower,
When, brief and fierce, the mountain shower

Pours like a torrent down,
And when returned the sun's glad beams,
Whiten'd with foam a thousand streams
Leap from the mountain's crown.

“This lake,” said Bruce, “whose barriers drear
Are precipices sharp and sheer,

Yielding no track for goat or deer,
Save the black shelves we tread,
How term you its dark waves ? and how
Yon northern mountain's pathless brow.
And yonder peak of dread,
That to the evening sun uplifts
The griesly gulfs and slaty rifts,
Which seam its shiver'd head ?"—
"Coriskin, call the dark lake's name,
Coolin the ridge, as bards proclaim,
From old Cuchullin, chief of fame.
But bards, familiar in our isles
Rather with Nature's frowns than smiles,
Full oft their careless humours please
By sportive names from scenes like these.
I would old Torquil were to show
His maidens with their breasts of snow,
Or that my noble Liege were nigh
To hear his Nurse sing lullaby !
(The Maids—tall cliffs with breakers white,
The Nurse—a torrent's roaring might,)
Or that your eye could see the mood
Of Corryvrekin's whirlpool rude,
When dons the Hag her whiten'd hood—
'Tis thus our islesmen's fancy frames,
For scenes so stern, fantastic names."

SCOTT.

dawn'-ing (*dōn-*)

ro-màn-tic

àd-verse

yield'-ing (*yēld-*)

trà-versed

earth-quake

rav-iné' (-én)

a-býss

con-densed

whìrl-pool

isles-men

fan-tàs-tic

plight (*plit*), condition, usually of danger or misfortune. Old English *pliht*, a pledge, security.

clombe, old form of past tense of "climb."

hàl-i-dome, holiness. The ending "dome" is the same as in "wisdom, martyrdom," &c.

prim-éval, of the first or earliest age or time. Lat. *primus*, "first," and *ævum*, "age."

but this, except this.

vèg-ë-tà-tive (*vēj-*), growing, or causing growth.

kèn, mark, recognise, discern. *the Druid's stone*, rocking stone,

or "loggan, a large mass of rock so finely balanced as to sway backwards and forwards with a slight impulse. At one time supposed to be connected with Druidical religious observances.

prec-ár-i-ous, uncertain, not to be depended on, dangerous. Lat. *precarius*, that may be obtained by entreating one (Lat. *precor*, "I pray, or entreat"); depending on the will of some one: hence depending on uncertain events.

gries-ly, causing one to shudder, frightful, hideous.

Rewrite the above in prose; or describe any striking scenery that you have seen.

VARIETY OF MOUNTAINS.

EVEN among us in England, we have no adequate ideas of a mountain prospect; our hills are generally sloping from the plain, and clothed to the very top with verdure; we can scarce, therefore, lift our imaginations

to those immense piles whose tops peep up behind intervening clouds, sharp and precipitate, and reach to heights that human avarice or curiosity have never been able to ascend.



It need scarce be said that, with respect to height, there are many sizes of mountains, from the gently rising upland to the tall craggy precipice. The appearance is in general different in those of different magnitudes. The first are clothed with verdure to the very tops, and only seem to ascend to improve our prospects, or supply

us with a purer air: but the lofty mountains of the other class have a very different aspect. At a distance their tops are seen, in wavy ridges, of the very colour of the clouds, and only to be distinguished from them by their figure, which resembles the billows of the sea. As we approach, the mountain assumes a deeper colour; it gathers upon the sky, and seems to hide half the horizon behind it. Its summits also are become more distinct, and appear with a broken and perpendicular line. What at first seemed a single hill is now found to be a chain of continued mountains, whose tops, running along the ridges, are embosomed in each other, so that the curvatures of one are fitted to the prominences of the opposite side, and form a winding valley between, often of several miles in extent, and all the way continuing nearly of the same breadth. Nothing can be finer or more exact than Mr. Pope's description of a traveller straining up the Alps.¹ Every mountain he comes to he thinks will be the last; he finds, however, an unexpected hill rise before him; and that being scaled, he finds the highest summit almost at as great a distance as before. Upon quitting the plain, he might have left a green

¹ " So pleased at first the towering Alps we try,
Mount o'er the vales, and seem to tread the sky,
The eternal snows appear already past,
And the first clouds and mountains seem the last,
But those attained, we tremble to survey
The growing labours of the lengthened way,
The increasing prospect tires our wandering eyes,
Hills peep o'er hills, and Alps on Alps arise ! "

Essay on Criticism, 225-232.

and a fertile soil, and a climate warm and pleasing. As he ascends, the ground assumes a more russet colour; the grass becomes more mossy; and the weather more moderate. Still, as he ascends, the weather becomes more cold, and the earth more barren. In this dreary passage he is often entertained with a little valley of surprising verdure, caused by the reflected heat of the sun collected into a narrow spot on the surrounding heights. But it much more frequently happens that he sees only frightful precipices beneath, and lakes of amazing depths; from whence rivers are formed, and fountains derive their original. On those places next the highest summits, vegetation is scarcely carried on; here and there a few plants of the most hardy kind appear. The air is intolerably cold: either continually refrigerated with frosts, or disturbed with tempests. All the ground here wears an eternal covering of ice, and snows that seem constantly accumulating. Upon emerging from this war of elements, he ascends into a purer and a serener region, where vegetation has entirely ceased; where the precipices, composed entirely of rocks, rise perpendicularly above him; while he views beneath him all the combat of the elements; clouds at his feet; and thunders darting upward from their bosoms below. A thousand meteors, which are never seen on the plain, present themselves. Circular rainbows; mock suns; the shadow of the mountain projected upon the body of the air; and the traveller's own image reflected, as in a looking-glass, upon the opposite cloud.

GOLDSMITH.

<i>ad-é-quate</i>	<i>un-ex-pèct-ed</i>	<i>imaginá-tions</i>
<i>im-mènse</i>	<i>en-ter-tained'</i>	<i>distinguised</i>
<i>re-sèm-bles</i>	<i>mòd-er-ate</i>	<i>precipitate</i>
<i>de-scrip-tion</i>	<i>re-flect-ed</i>	<i>perpendicular</i>
<i>heights (híts)</i>	<i>dis-turbed</i>	<i>original</i>
<i>fright-füll</i>	<i>trà-vel-ler</i>	<i>vegetá-tion.</i>

pro-spect, view, outlook, scene.

Lat. *pro*, "forward," and *spec*, "see, look." Express "a mountain prospect" at greater length.

in-ter-vén-ing, coming between.

Lat. *inter*, "between," and *venio*, "I come."

àv-ar-ice, greed, covetousness.

Lat. *avaritia*, from *avarus*, "greedy," from *aveo*, "I desire, or covet."

cur-i-ðs-i-ty (*kyùlr-*), inquisitiveness, eagerness to see or know about. Lat. *curiositas*, from *curiosus*, "careful, thoughtful, inquisitive," from *cura*, "care, concern, anxiety."

have ever been able, &c. Could "has" be used here?

màg-ni-tudes, sizes. Lat. *magnitudo*, "greatness," from *magnus*, "great."

em-bos'-omed (-bùz-), folded as if in one's bosom; inclosed.

cur-va-tures, bends, rounded outlines. Lat. *curvatura*, "a rounding, bend," from *curva-*

tum, "to bend," from *curvus*, "crooked."

prò-min-ence, a prominent, outstanding, jutting portion. Lat. *pro*, "forth, forward," and *mineo*, "I project, or stand out."

a-máz-ing, putting the mind in a maze,—in a state of bewilderment or astonishment.

in-tòl-er-a-bly, unbearably, insufferably; so that it cannot be borne. Lat. *in*, "not," and *tolero*, "I endure." Rewrite the sentence—"The air is intolerably cold," changing "intolerably" into other forms.

re-frig-er-àt-ed (-frij-), made cold, cooled.

ac-cum'-ùl-àt-ing (-kyùm-yùl-), gathering in heaps. Lat. *ac* (*ad*), "to," and *cumulatum*, "to heap up," from *cumulus*, "a heap."

mé-tà-ore, shooting or falling stars.

pro-jèct-ed, thrown forward.

CORONACH.

He is gone on the mountain,
He is lost to the forest,
Like a summer-dried fountain,
When our need was the sorest.
The fount reappearing
From the raindrops shall borrow,
But to us comes no cheering,
To Duncan no morrow !

The hand of the reaper
Takes the ears that are hoary,
But the voice of the weeper
Wails manhood in glory.
The autumn winds rushing
Waft the leaves that are serest,
But our flower was in flushing
When blighting was nearest.

Fleet foot on the corrie,
Sage counsel in cumber,
Red hand in the foray,
How sound is thy slumber !
Like the dew on the mountain,
Like the foam on the river,
Like the bubble on the fountain,
Thou art gone ; and for ever !

SCOTT.

mount'-ain
fount'-ain

re-ap-pear'-ing
au'-tumn (ō-tum)

rain'-drops
blight-ing

cōr-o-nach, dirge, lamentation
for the dead.
cōr-rie, a steep hollow on a
hill-side.

sére, dried-up, withered.

cum-ber, trouble.

fōr-ay, raid, or
plundering
excursion.

WHAT THE AIR IS MADE OF.

ABOVE and around us, to what part soever of the earth's surface we may go, at the top of the highest mountain as well as at the bottom of the deepest mine, we find ourselves surrounded by the invisible ocean of gas and vapour which we call AIR. It must, therefore, wrap the whole planet round as an outer envelope. Considered in this light, it receives the distinctive name of the ATMOSPHERE, that is, the vapour-sphere—the region of clouds, rain, snow, hail, lightning, breezes, and tempests.

In early times men regarded the air as one of the four elements out of which the world has been made. It is not so very long since this old notion disappeared. But now it is well known that the air is not an element, but a compound of two elements—viz., the gases called *Nitrogen* and *Oxygen*.

In various ways chemists have analysed or decomposed air into its component elements, but the result is always

the same, namely, that in every hundred parts of ordinary air there are by weight about seventy-nine of nitrogen and twenty-one of oxygen.

Air, when carefully tested, is always found to contain something else than nitrogen and oxygen. Solid particles, with various gases and vapours, are invariably present, but always in exceedingly minute, though most irregular, quantities, when compared with the wonderfully constant proportions of the two chief gases. Some of these additional components of air are not less important than the nitrogen and oxygen. That they exist may be easily proved, and some light may thereby be thrown on the nature and uses of the air.

The presence of vast numbers of *solid particles* in the air may be shown by letting a beam of sunlight or of any strong artificial light fall through a hole or chink into a dark room. Thousands of minute motes are then seen driving to and fro across the beam as the movements of the air carry them hither and thither. Such particles are always present in the air, though usually too small to be seen unless when, as in the darkened room, they are made visible against surrounding darkness by the light which they reflect from their surfaces when they cross the path of any strong light-rays. They are quite as abundant in the dark parts of the room, though for want of light falling upon them they are not seen there.

Could we intercept these dancing motes and examine them with a strong microscope, we should find them to consist chiefly of little specks of dust. But among

them there sometimes occur also minute living germs, from which, when they find a fitting resting-place, lowly forms of plants or animals may spring. Some diseases appear to spread by means of the lodging and growth of these infinitesimal germs in our bodies, for they are so small as to pass with the air into our lungs, and thus to reach our blood.

It is difficult to catch these tiny motes from a sunbeam, but rain does this admirably for us. One great office of rain is to wash the air and free it from these impurities. Hence, when rain-water is carefully collected, especially in large towns, it is found to contain plenty of these solid particles, which it has brought down with it in its fall through the air. This can be clearly seen when a small quantity of rain, gathered from an open space in a town, is evaporated to dryness, and the residue is placed under a microscope. Abundant particles of dust or soot are mingled with minute crystals of such substances as sulphate of soda and common salt. Hence we learn that, besides the solid particles, there must be floating in the air the vapours or minute particles of various soluble substances which are caught up by the rain and carried down with it to the soil. In seizing these impurities and taking them with it to the ground, the rain purifies the air and makes it more healthy, while at the same time it supplies the soil with substances useful to plants.

But far more important than these solid ingredients are three invisible substances, two of them gases, called respectively ozone and carbonic acid gas, the third the

vapour of water. After a thunder-storm the air may sometimes be perceived to have a peculiar smell, which however is more distinctly given off from an electric machine. This is *ozone*, which is believed to be oxygen gas in a peculiar and very active condition. It promotes the rapid decomposition of decaying animal or vegetable matter, uniting with the noxious gases, and thus disinfecting and purifying the air. It is most abundant where sea-breezes blow, and least in the air of the crowded parts of towns. The healthiness or unhealthiness of the air seems to depend much on the quantity of ozone, which is estimated by the amount of discoloration produced by the air within a certain time upon a piece of paper prepared with starch and iodide of potassium.

Consider next the *carbonic acid gas*. When a piece of coal is set on fire it burns away until nothing but a little ash is left behind. Or when a candle is lighted it continues to burn until the whole is consumed. Now, what has become of the original substance of the coal and the candle? It seems to have been completely lost; yet in truth we have not destroyed one atom of it. We have simply, by burning, changed it into another and invisible form, but it is just as really existent as ever. We cannot put it back into the form which it had in the coal and candle, but we can at least show that it is present in the air.

The substance of a piece of coal or of a candle is composed of different elements, one of which is called *carbon*. This element forms one of the main ingredients

out of which the substance of all plants and animals is built up. Our own bodies, for example, are in great part made of it. In burning a bit of coal, therefore (which is made of ancient vegetation compressed and altered into stone), or a candle (which is prepared from animal fat), we set free its carbon, which goes off at once to mix with the air. Some of it escapes in the form of little solid particles of soot, as we may show by holding a plate over the candle flame, when the faint column of dark smoke at once begins to deposit these minute flakes of carbon as a black coating of soot on the cool plate. The black smoke issuing from chimneys is another similar illustration of the way in which solid particles are conveyed into the air.

But the largest part of the carbon does not go off in smoke. It is in the act of burning seized by the oxygen of the air, with which it enters into chemical combination, forming the invisible carbonic acid gas. It is, indeed, this very chemical union which constitutes what we call burning, or combustion. The moment we prevent the flame from getting access of air, it drops down and soon goes out, because the supply of oxygen is cut off. All ordinary burning substances, therefore, furnish carbonic acid gas to the atmosphere.

The amount thus supplied is of course comparatively small, for the quantity of vegetable or animal substance burnt either by man or naturally must be but insignificant, when the whole mass of the atmosphere is considered. An infinitely larger quantity is furnished by living air-breathing animals. In breathing we take

air into our lungs, where it reaches our blood. A kind of burning goes on there, for the oxygen of the air unites with the carbon of the blood, carbonic acid is produced and comes away with the exhausted air, which we exhale again before taking the next breath. Just as we put out the burning of a candle by inverting a glass over it, and closing it from the air, so we put an end to our own lives if we shut ourselves off from the air. When we reflect that every air-breathing animal is continually supplying carbonic acid gas to the atmosphere, we perceive how important this source of supply must be.

Living plants in the presence of sunlight have the power of abstracting from the carbonic acid of the air the carbon of which their framework is so largely made. When they die, their decay once more sets loose the carbon, which uniting again with oxygen becomes carbonic acid gas, and is carried by rain into the soil, or taken up by the air. All decaying plants and animals which are freely exposed to the air furnish it with this gas.

Lastly, in many parts of the world, particularly in volcanic regions, this same gas is given out in large quantities from the ground. From all these various sources then, the atmosphere is continually replenished with carbonic acid gas, to supply the loss caused by the enormous demands of the vegetable world for carbon.

Nevertheless, the quantity of this gas present in the air is very small compared with the volume of the

nitrogen and oxygen. It has been found to amount to no more in ordinary pure air than four parts in every ten thousand of air. Yet this small proportion suffices to support all the luxuriant growing vegetation of the earth's surface.

By the term *water-vapour* or *aqueous-vapour*, is meant the invisible steam always present in the air. Every one is familiar with the fact, that when water is heated it passes into vapour, which becomes invisibly dissolved in the air. A vessel of water, for instance, may be placed on a table in the middle of a room, heated by means of a spirit lamp till it boils, and kept boiling till the water is entirely driven off into vapour, or evaporated. The air in the room shows no visible change, though it has had all this water-vapour added to it. But it may be easily made to yield back some of the vapour. Let an ice-cold piece of glass, metal, or any other substance be brought into the room. Though perfectly dry before, its surface instantly grows dim and damp. And if it is large and thick enough to require some minutes to get as warm as the air in the room, the dimness or mist on its surface will pass into trickling drops of water. The air of the room is chilled by the cold glass, and gives up some of its moisture. Cold air cannot retain so much dissolved vapour as warm air, so that the capacity of the air for vapour is regulated by its temperature.

It is not needful, of course, to boil water in order to get enough of water-vapour in the air of a room to be capable of being caught and shown in this way. In a

warm sitting-room, where a few persons are assembled, there is always vapour enough to be made visible on a cold glass. In frosty weather the windows may be found streaming with water inside, which has been taken out of the air by the ice-cold window-panes. Whence came this moisture? It has been for the most part breathed out into the air by the people in the room.

Each of us is every moment breathing out water-vapour into the air. As a rule, we do not see it, because the air around us is warm enough to dissolve it at once. But anything which chills our breath will make the vapour visible, such as breathing on a cold piece of glass, or metal, when a film of mist at once appears on the object, or walking outside on a very cold frosty day, when the vapour of each breath becomes visible as a little cloud of mist in the air.

No matter, therefore, how dry the air may appear to be, more or less of this invisible water-vapour is always diffused through it. Every mist or cloud which gathers in the sky—every shower of rain, snow, or hail, which falls to the ground—every little drop of dew which at nightfall gathers upon the leaves, bears witness to its presence.

The importance of this ingredient of the atmosphere in the general plan of our world, can hardly be over-estimated. It is to the vapour of the atmosphere that we owe all the water circulation of the land—rain, springs, brooks, rivers, lakes—on which the very life of plants and animals depends, and without which, as far

the village. This time should be devoted to a walk in the country or time for sports to be enjoyed. The small properties will be a great source of interest to the young people.

He had been brought up against the
Spartan system, and he was present in the
Spartan school when he saw that when
the boys were sent to the temple, which became
the scene of the sacrifice, a vessel of water was
placed in the middle of a
circle of stones, and a
boy was sent round it
with a rattle. The boy in the process of
circling round the vessel, which was
in the form of a bull, and

separated. Lat. *re-pon-sus*, "on."

Grk. *oizo*, "I *fill*," the substance being from the "peculiar to the air when it is

dis-col-or-á-tion.
the force of "dis."
become &c.? See

re-plen-ished, filled again, supplied with a fresh stock. Lat. *re*, "again," and *plenus*, "full," -ish, causative verb ending.

a-que-ous, watery. Lat. *aqua*, "water."

dif-fused, spread throughout. Lat. *dif* (*dis*), "asunder, in all directions," and *fusum*, "to pour."

THE RAINY DAY.

THE day is cold and dark and dreary,
It *rains*, and the wind is never weary ;
The *vine* still clings to the mouldering wall,
But at *every* gust the dead leaves fall,
And *the* day is dark and dreary.

My life is cold and dark and dreary,
It rains, and the wind is never weary ;
My thoughts still cling to the mouldering past,
But *the* hopes of ^{up} thick in the blast,
And *the* day is dark and dreary.

Be still, said I, and cease repining—
Behind me the sun still shining ;
Thy fate is in thy hand, not in the hand of all,
Thy sin must fall,
And *the* day is dark and dreary.

LONGFELLOW.

as we know, the land would become as barren, silent, and lifeless as the surface of the moon. It is, likewise, to the changes in the supply of this same invisible, but ever present substance, that the rise of winds and storms is largely due.

The quantity of water-vapour in the air varies from day to day, and, indeed, from hour to hour. It is always comparatively small in amount, ranging from about four to about sixteen parts by weight in 1,000 parts of air.

PROFESSOR ARCHIBALD GEIKIE.

<i>ən-vel-ope</i>	<i>dis-ap-pear'-ed</i>	<i>in-vár-i-a-bly</i>
<i>di-stinct-ive</i>	<i>ex-pér-i-ment</i>	<i>ad-dl-tion-al</i>
<i>ɛ-lèc-tric</i>	<i>pur'-i-fy-ing (pyúr-)</i>	<i>ärt-i-fl-ci-al</i>
<i>health'-i-ness</i>	<i>äd-mir-a-bly</i>	<i>im-pur'-i-ties</i>
<i>cär-bòn-ic</i>	<i>in-gréed-i-ents</i>	<i>pärt-ic-ül-ar-ly</i>
<i>ex-haust'-ed</i>	<i>règ-ül-ät-ed</i>	<i>in-sig-nì-fic-ant</i>
<i>ní-tro-gen</i>	<i>ðx-y-gen</i>	<i>phðs-phor-us</i>

ät-mo-sphere, vapour-sphere.
Grk. *atmos*, "vapour," and *sphaira*, "a sphere."

än-a-lysed, separated into its component parts. Grk. *ana*, "up, or away," and *luo*, "I loose, or set free."

in-ter-cèpt, stop (on one's way between two points), catch.
Lat. *inter*, "between," and *captum*, "to take."

mic-ro-scope, an instrument whereby one is able to see

very small objects; a magnifying glass. Grk. *mikros*, "small," and *skopeo*, "I see."

in-fin-it-ès-im-al, infinitely small, exceedingly small.

ð-váp-or-ät-ed, passed off as vapour, driven off in vapour.

rè-sid-ue, what sits down, remains, or is left behind.

Lat. *residuum*, from *re*, "back," and *sedeo*, "I sit."

sol-u-ble(-yil-), capable of being melted, of having its parts

loosened or separated. Lat. *solvo*, "I loosen."

ō-zone, from Grk. *ozo*, "I smell"; the substance being so named from the "peculiar smell" of the air when it is present.

dis-in-fect-ing, *dis-col-or-ā-tion*.

Consider the force of "dis." *what has become* &c.? See page 78.

re-plen-ished, filled again, supplied with a fresh stock. Lat. *re*, "again," and *plenus*, "full," -*ish*, causative verb ending.

ā-que-ous, watery. Lat. *aqua*, "water."

dif-fused', spread throughout.

Lat. *dif* (*dis*), "asunder, in all directions," and *fusum*, "to pour."

THE RAINY DAY.

THE day is cold and dark and dreary,
It rains, and the wind is never weary ;
The vine still clings to the mouldering wall,
But at every gust the dead leaves fall,
And the day is dark and dreary.

My life is cold and dark and dreary,
It rains, and the wind is never weary ;
My thoughts still cling to the mouldering past,
But the hopes of youth fall thick in the blast,
And the days are dark and dreary.

Be still, sad heart ! and cease repining—
Behind the clouds is the sun still shining ;
Thy fate is the common fate of all,
Into each life some rain must fall,
Some days must be dark and dreary.

LONGFELLOW.



A GREAT FLOOD.

[THE scene is in the province of Moray. The summer of 1829 had been very dry, but in August heavy rains fell; and the innumerable mountain streams poured their waters into the rivers, which rapidly overflowed their banks far and wide.]

AMONG the poor people, who were for a long time in danger, was a man of the name of Sandy Smith, whose cottage stood upon a piece of furzy pasture, not far from one of the rivers which had overflowed its banks. A great number of the inhabitants of the cottages in the part of the country nearest to him escaped early in the

night of Monday to a large barn, which stood on high ground ; and others were received into a gentleman's house, where they were made as comfortable as circumstances would permit. All of them thought that poor Sandy Smith would never be seen by them again, for his house was in a low situation, and already surrounded by water. But, on looking in the direction of his cottage, they were very glad to see a distant gleam of light, which came from a candle placed in his cottage window. They, therefore, had lights placed in the windows of the gentleman's house just mentioned, in order that the poor people in the distant cottage might know they were not forgotten, although it was impossible to get at them

A dismal night had Sandy Smith in his cottage, in the midst of the waters. At break of day the kind people, who were looking out for him and his family, saw all the country laid under water, including many fields which had the day before been beautiful with yellow wheat, green tops of turnips, and other crops ; and the surface of the flood was strewed with trees and every kind of wreck from farms, and barns, and houses. The heavy rain and the raging wind were yet continuing ; the cattle were wandering about, and lowing for want of their usual food, and crowds of distressed families were crying and bewailing themselves. Afar off was seen the cottage of Sandy Smith—its roof like a speck above water ;—and it was seen that the gable end had given way. With the help of a good telescope, the family were perceived to have got out of the cottage,

and to be all huddled together on a small spot of ground not more than a few feet square, and forty or fifty yards distant from their ruined dwelling. Sandy himself was seen sometimes standing up and sometimes sitting on a small cask ; he seemed to be watching the large trees that swept past him and his wife and children, and which threatened to sweep them away. His wife was sitting on a bit of a log, covered with a blanket, having one child on her knee, and two leaning by her side. On the ground stood a bottle and glass, from which those who saw them hoped they had derived some little comfort in the midst of the cold rain and wind. Close to them were about a score of sheep, a small horse, and three cows, all glad, like themselves, to stand on that little spot of dry land.

The greatest fear which those who saw these poor people from distant houses had, was, that the waters would gain upon them before any boat could be procured to go and bring them away. A lady in the neighbourhood had, however, ordered her horses to be put to a boat, to drag it down to a convenient spot for being launched, and three bold men got into it, determined to save the lives of the poor people if possible. Before they reached Sandy Smith and his family, they thought it their duty to rescue another poor family, whose situation was still more dangerous, as they were in a house of which hardly anything was visible but the thatch. When they reached that house, the poor people within were obliged to duck down into the water before they could be dragged out of the windows.

But to reach the house, and then to get on to where Sandy Smith and his family were waiting, was a task of no small labour and difficulty : for, as the boat seemed to be going on fairly and well, it was more than once carried away by the currents that were to be crossed, and carried away with such violence, that those on shore thought the people in the boat would be lost. The activity of the men in the boat was their only safety ; and one of them, whose name was Donald Munro, but who, on account of his dress, was that day called *Straw Hat and Yellow Waistcoat*, gained much honour for his wonderful exertions. Sometimes he went at the head of the boat, and sometimes at the stern, not unfrequently in the water up to the neck, and then again rowing with all his strength. Before they reached the spot where Sandy Smith and his family were standing in a cluster on their little spot of land, there were five raging currents to be passed. The moment the boat came to one of these, it was whirled away far down the stream ; and when one current was passed, the men had to pull the boat up again all the way before they ventured to cross another. The last current which they had to cross was the worst ; but Smith was so delighted to see the boat approaching, that he ran into the water to meet it, and helped to drag it towards the spot whereon his wife and children were yet remaining. They were all then safely placed in the boat, and carried back, with many difficulties, across all the currents to the shore.

It appeared that these poor people had been driven

out of their house at about eight o'clock on the Monday evening, and had fled to the only dry place they could reach. They had but just time to throw blankets over them, and Smith himself had, fortunately, presence of mind enough to take with him a small bag of meal. His cows, and his pony, and his sheep, being let out, wandered to the same spot. As the water gained upon the little space of ground they had, the poor beasts, feeling chilled with the cold, pressed inwards also upon the family. Smith caught a log which was floating past, and it made a seat for his companions; an old chest served the same purpose: and a little meal and a little whisky was all their nourishment. There they had remained all that dismal night—all dark around them; the noise of the waters roaring in their ears—great trees going crashing past them every minute, as if they would sweep them all into eternity; and all the time the wind and rain beating upon them so fiercely that it seemed as if it would be impossible for them to live long under it. Nothing was to be seen but the far-off candles placed in the house which has already been mentioned; and the light of which, as had been intended, was still some comfort to them in their desolate situation. When the light of morning broke upon them, Sandy Smith saw the little hamlet of Stripeside, where he had lived, a heap of ruins, besides all the neighbouring hamlets; and, far above them, the bridge broken by the violence of the stream. He had the attention to hide the sorrowful sight from his wife, by wrapping her head more closely from the cold, until the waters began to

fall a little, in consequence of the giving way of some embankments ; and then he told her to look about her, for that now there was some hope. The Scotch peasantry are a religious people, and Sandy, who thought, when he saw the light of the candles shining across the broad and roaring water in the night, that the Providence to whom he addressed his prayers had not forgotten him and his little family, observed, after all the danger was over, that he should be grateful to God all the rest of his days.

Another family, whose cottage stood at no great distance from that of Sandy Smith, passed that terrible night in the midst of still greater dangers and struggles for life. The name of these poor people was Kerr. They left their house, which was already surrounded by water, early in the night, and tried to wade across the water to the dry ground, but the farther they waded, the deeper they found the water. Kerr's niece, a girl twelve years of age, lost heart, and began to sink : and the stream was increasing, and the darkness of night was upon them. The old man, however, did not give way ; but, taking his niece on his shoulder, waded back with his wife, and by great labour regained his own cottage. It was between eight and nine o'clock in the evening when they groped their way to it ; and they were obliged to clamber up into the garret. There they remained, in loneliness and darkness, until about two o'clock in the morning, when the roof of the cottage, damaged by the wet, began to fail. To avoid being

crushed to death, the old man forced his way through a partition into the next house. Fortunately for them all the partition was only made of wood and clay. There they remained till about eight o'clock in the morning, when the strength of the water on the outside became so great, that it bent the bolt of the lock of the house door inwards, until it had no more hold of the staple than about the eighth of an inch. If the door had given way, the water would have rushed in with such violence as to sweep away the back wall of the house ; and Kerr rummaged the garret until he was lucky enough to find a bit of board and a few nails, with which he managed to make the door more secure. At last, the roof of this second house began to fail also ; and Kerr and his wife and niece had no way of escaping but through the thatch.

Whilst the party in the cottage were undergoing all this, there were some on the shore who were very anxiously watching their fate ; and among them a son of Kerr's, who had been straining his eyes towards his father's cottage all night long ; unable to send help to them, and never expecting to see them alive more. Those about the young man tried to comfort him ; but even whilst they were speaking to him the gable of Kerr's dwelling was seen to give way, and to fall into the raging current. But a gentleman, who was looking towards the cottage with a telescope, observed a hand thrust through the thatch of the house next to it. The hand worked busily, as if in despair of life ; then a heap appeared, and, at length, Kerr was seen to drag himself

through the roof, and to drag up his wife and niece through the thatch after him. The three unfortunate people were then seen crawling along the roof towards the next house, for there were three houses built in a row: Kerr went first, and behind him the woman and girl, hardly able, from the force of the wind, to keep a blanket round them. Fortunate was it for them that old Kerr possessed so much courage and sense, exactly when courage and sense were wanting, for the tottering roof they had just left fell into the water, and was swept away. Kerr now tried in vain to force a passage through the thatch into the next house, but, finding he could not do it, he attempted one of the windows with no better success. He was then seen to drop himself down from the eaves upon a small speck of ground, a little higher than the rest, close to the back wall of the houses. To that spot of ground, where there was just room for them to stand, but not to move, he managed to get his wife and niece safely down.

Among those who could see all this going on was also a nephew of old Kerr's, the brother of the little girl who was with Kerr and his wife; and he was half distracted by the sight. "Good God! friends," he exclaimed, "will you allow human beings to perish before your eyes, and do nothing to give them help? If I had but a boat, I would try to save them. Will nobody give me a horse to go in search of one?"

It has already been mentioned that a lady in the neighbourhood lent her horses to drag a boat to the place where it was wanted; and in this boat it was that

the Kerrs were taken from the dangerous spot on which they stood, before the brave men in the boat went on to Sandy Smith and his family, who, it will be remembered, had a few more yards of ground to stand upon than the Kerrs. The skill and coolness of these men, among whom was *Straw Hat and Yellow Waistcoat*, were witnessed by those on shore with admiration ; and when they saw that they had crossed the dangerous currents, just in time to save the Kerrs, who had now only about three feet of earth left to stand upon, they gave them three hearty cheers. They were in no small degree rejoiced to see Kerr, and his poor wife and the little girl, stowed safely in the boat ; but when, directly after, they saw the brave *Yellow Waistcoat* wading away, and sounding the depths with a pole, until he got to one end of the building, and then beheld him lay hold of a large pig, and throw it into the boat as easily as if it had been a rabbit, they were angry to think his life should have been risked for such a saving—but he must have been a good-natured fellow, for it seems that the pig belonged to a poor widow, and was all the property she had left.

When the frail boat, crossing again all the dangerous streams, arrived at the shore with the little party, they were received by many of their friends with so much heart and rejoicing, that even old Kerr, who was known for his firmness by the name of Old Rodney, could not help shedding a few tears among the rest, exclaiming in his homely Scotch—“ Hoot, toot, nonsense ! What’s this o’t ? Toots ! I canna stand this mair than your bairns. Od, I maun just greet it out.”

The boat next, with considerable difficulty, reached a cottage among alders, a little way above the bridge, in which were three helpless old women, one of whom had been for years bedridden. When the boat reached the hut, *Yellow Waistcoat* knocked in the window and entered with another of the boat's crew. They found the inmates sitting on chairs, immersed in water, which was four feet deep in the house. They were nearly dead with cold, and could not have existed many hours longer. They were lifted through the window, and were soon placed in safety.

To reach another family, consisting of a poor invalid old man, his infirm wife, their daughter, and grandson, it was necessary to carry the boat some distance, in order to launch it to another part of the flood. By the time the boat with its crew reached the cottage, its western side was entirely gone, and the boat was pushed in at the gap. Not a sound was heard within, and they suspected that all were drowned ; but, on looking through a hole in a partition, they discovered the unhappy inmates roosted, like fowls, on the beams of the roof. They were, one by one, transferred safely to the boat, half dead with cold : but the old man's mind, unable to withstand the agonizing apprehensions he had suffered, had become utterly deranged.

A book might be filled with accounts of the wonderful escapes of the night when these families were exposed to the wind, and the rain, and the flood.

SIR T. DICK LAUDER.

com-fort-a-ble
in-clúd-ing
be-wail-ing
de-térn-ined
ex-ér-tions
sdr-row-füll

eighth

dis-trèssed
rú-ined
thrèat-enèd
waist'-coat
vî-o-lence
wît-nessed

wrap

círcumstances
impôssible
díficulty
unfréquently
relîgious
unfôrtunate

crawl'ing

tél-e-scope, an instrument that enables one to see objects far off. Grk. *telē*, "far off," and *skopeo*, "I see, or look."

pär-ti-tion, dividing, division; wall, or other erection fencing off one space from another. Lat. *partitio*, from *partio*, "I divide into parts," from *par*, "a part."

dis-tract-ed, out of one's mind; lit. drawn in different directions, pulled asunder. Lat. *dis*, "asunder," and *tractum*, "to draw."

was Straw Hat and Yellow Waistcoat. "Straw Hat" and "Yellow Waistcoat" are joined by "and"; ought

it not, then, to be "were," not "was"? Explain fully.

maun, must.*greet*, weep, cry.

im-mérsed, dipt, plunged in water (or other liquid). Lat. *im* (*in*), "into," and *mergo*, "I plunge."

in-val-id, weak, infirm. Lat. *in*, "not," and *validus*, "strong," from *valeo*, "I am well, or strong."

ag-on-íz-ing, exceeding distressing, extremely painful. Grk. *agonia*, "a contest," "anguish."

ap-pré-hén-sions, fears (of coming loss or pain). Lat. *ap* (*ad*), "to," and *prehendo*, "I take, or seize."

Write out, in your own words, the story of a rescue of people from the dangers of a sudden flood.



FLOWERS OF RIVERS AND RIVER-SIDES.

1.—GREEN THREADS AND WEEDS.

VERY cool on a hot day is the sweet margin of a river as we sit beneath the shadow of some overhanging bough, close beside

“The knotted water-flags,
That whistle stiff and dry about the marge.”

The sense of coolness, too, is heightened by seeing how the river, as it rushes over some mass of stones in its

bed, has sprinkled the clear drops on the broad leaves, or left them hanging on the tall spiry grasses which nod beside and in the very waters, and has perchance given us a sprinkling, as it dashed past us to make a foaming waterfall.

Many a gentle odour comes up as we wander among the wet grasses, ankle-deep, and crush the wild flowers growing at the water's edge. The willows and alders which grow there make a pleasant rustling at their roots as the river winds in and out among the green mosses. A very slight air will put the flexible willow-bough in motion, and bid its red-tipped branches taste the waters, and will turn up its silvery-hued leaves. The alders which stand up thickly near them look almost gloomy in the contrast made by their deeper green foliage; and yet when the sun shines fully upon them, they, too, become leaves of light, and quiver gently and gracefully. We know that both willow and alder are holding together into firmness the very soil on which our wild flowers grow, and where they lurk among the lowly moss or arise in graceful and tall spires above the rushes. Even when are blowing the rougher winds of September, which,

"Hollow whistling through the leaves,
Foretell a tempest and a blustering day,"

we know that the falling multitudes of those dark, clammy leaves shall not injure, as would some foliage, either flowers or grass, nor drive away one bell or

star which gathers there. Browne had marked this, when he wrote, in one of his pastorals—

“The alder, whose fat shadow nourisheth;
Each plant set near to him long flourisheth.”

But in thinking of aquatic vegetation, we have not to dwell only on the flowers which grow amid

“The rank of osiers by the murmuring stream;” we look on the quiet bosom of the slowly-winding river, or the glassy lake, to see that there is a mass of vegetation, not only beside the waters, but altogether in and upon them.

It is not here that we may tell at any length of the floating slimy or green masses found more or less in all stagnant waters. They need the microscope to reveal their wonders, and none but he who is disposed to study them long and carefully can hope to know them. Slimy masses called will-o’-the-wisps, fallen stars, and flowers of heaven, are known to all who live near water. Then there are the quick-mosses, quiver-worts, and other wonderful green filmy threads of water-weeds abounding in some ponds; and the crowsilks, which are tufts of green threads found in immense abundance in some ditches, forming wide-spread strata, which sometimes come to the surface, and cover it as with a dense green scum, several inches thick. Sometimes they seem almost to fill up a lake, and country people have turned them to account, using these crowsilks instead of wadding.

weaving them into cloth, and even making them into paper. At other times the green filaments form a ball, like the globe crowsilk or moorball, which wanders about in the water, and is perhaps seized by some wanderer there, and made into a pen-wiper.

But these plants have higher services to perform. They purify the water by assimilating for their own nourishment much which renders it unwholesome, and they give out the oxygen which is to renovate the air consumed by the fish or other living animals in the stream; while those slimy jellies are considered to retain, by their viscid nature, the atmospheric air; and thus these jellies and threads tend to render the still river or pond safe to the neighbourhood. They are of use in fixing the muddy ooze, and are, as it were, the refiners and strainers of nature. Were it not for them, the mud which now filters through them, and falls down to lie at the base, would cause many a crystal rill which serves as a mirror for the flowers nodding at its border, to be a disturbed mass of muddy water, where the grasses would no longer sweep gracefully beneath the surface, nor the blue forget-me-nots look like sapphires among its herbage.

Equally common are the duckweeds, which cover the water in bright green masses, which, however, are flowering plants, though the rambler by the margin of the river sees no bright petals among the masses of green, flat, small leaves which form a bright verdure on the pool; but if he examines these during July, he may

discover the little pale-coloured, yet bright, anthers on the edge of the green leaf.

No water-plant is more plentiful than the lesser duckweed ; its small, thick fronds, or leaves, as most people call them, lying in crowded numbers, with small hair-like roots hanging down from beneath them. There are other less common species too. In one, the leaves are shaped like an ivy-leaf ; and in another these leaves measure half an inch across. Small as they are, they are also useful plants. Besides being relished by ducks and water-fowl, they shelter and feed the large number of living creatures to whom has been given a home in the fresh waters ; and like others, the water-weeds purify the stream. Disagreeable as a green slimy mass of water, covered with duckweeds, is to the eye of the beholder, it is far better for the neighbourhood than if that stagnant pool bore no green weeds in or upon it.

There is a large number of submerged or floating plants, called especially pondweeds. We have eighteen native species growing in rivers, or still waters, or peat pits ; and some of them, when just rising above the pond in spring, make it look quite pretty with their reddish young shoots. As they grow older, however, they lose the red tinge ; and we can only describe them generally as having often large, thin, olive-green, almost transparent leaves, curled at the edges, and constantly waving up and down to every breath of wind ; reminding us sometimes of a seaside port in which the sea-weeds float. It is for the greenness and the grace of

their movements that we must admire the pondweeds, for they have only greenish spikes of flowers of no beauty.

<i>mùr-mur-ing</i>	<i>strùc-ture</i>	<i>màrgin, màrge</i>
<i>mic-ro-scope</i>	<i>crow'-silks</i>	<i>rùstling</i>
<i>quìv-er-worts</i>	<i>knòt-ted</i>	<i>sprìnkled</i>
<i>fil-a-ments</i>	<i>rough'-er</i>	<i>aqùtic</i>
<i>un-whòle-some</i>	<i>ov-er-hàng-ing</i>	<i>relished</i>
<i>at-mo-sphèr-ic</i>	<i>dis-a-gree'-a-ble</i>	<i>altogether</i>
<i>dx-y-gen</i>	<i>sub-mèrged</i>	<i>sàpphires</i>
<i>òd-our</i> , smell, perfume. Lat. <i>odorem</i> , "odour."		of films, or thin skins, that peel off easily.
<i>flex-i-ble</i> , readily bent, bending easily. Lat. <i>flexum</i> , "to bend."		<i>as-sim-il-àt-ing</i> , making similar or like to themselves; con- verting into their own sub- stance, as food. Lat. <i>as</i> (<i>ad</i>), "to," and <i>similis</i> , "like."
<i>fol-i-age</i> , leafage, cluster of leaves, leaves (in mass). Lat. <i>folium</i> , "a leaf."		<i>rè-nov-ate</i> , make new, renew. Lat. <i>re</i> , "again," and <i>novatum</i> , "to make new," from <i>novus</i> , "new."
<i>ò-si-ers</i> , water-willows.		
<i>stàg-nant</i> , standing still, not flowing.		
<i>film-y</i> , slender; lit. composed		<i>vis-cid</i> , sticky, clammy

2.—RIVER BLOSSOMS.

Many of our aquatics, however, add to their green leaves the beauty of large and coloured blossoms. The pretty white flowers of the water-crowfoot often render a stream gay as it floats for miles through green meads. The flowers are shaped like that of the buttercup, but flatter. Its stems float quite under the water; and the narrow, threadlike segments of its leaves spread in all

directions, sometimes looking like an entangled ball of green fibres, though often they are only three-cleft.

But the handsomest of our water-plants, the queen of our quiet crystal streams, are the large white water-lilies, which in July lie open, showing their large golden centres, and having their numerous petals delicately tinged with cream-colour, or else white as the driven snow. The large rounded heart-shaped leaves are so glossy that the water runs off their surface, and the conical buds, half enclosed in their brownish cups, lie among them. All poets, both ancient and modern, praise this pure and lovely flower. Cowley says—

“ Such as the lovely swan appears
When rising from the Trent or Thame,
And as aloft his plumes he wears
Despises the less beauteous stream ;
So when my joyful flower is born
And does its native glory show,
The clouded rival she does scorn ;
They’re all but foils where lilies grow.”

The roots lie in the soil below, and the lovely flower has suggested many a beautiful simile. Wordsworth says—

“ And, like the water-lily, lives and thrives ;
Whose root is fixed in stable earth, whose head
Floats on the towering wave.”

The yellow water-lily, the thick golden cup of which stands up on its long floating stems, or reposes on its glossy leaves, is far more frequent than the white species,

and, though not nearly so handsome nor so sweet-scented, yet has its own beauty—

“ While the prime swallow dips his wing,
While the gold lily blows, and overhead
The light cloud smoulders on the summer crag.”

An odour, too, it has certainly, but it is more like that of brandy; hence, the flower is often called “ brandy-bottle.” Many could say with the poet—

“ Rapaciously we gathered flowery spoils
From land and water, lilies of each hue,
Golden and white, that float upon the wave.”

The margin of the river is the very gayest spot in our landscape during June, July, and August. Gleaming in the sun with large crumpled and waving petals of the most golden yellow, the tall iris, or corn-flag, is very lovely from spring till the end of summer, while in autumn the large seed-vessels are almost as conspicuous. These are at the top of the long stem where the flowers once waved, and are sometimes three or four inches long, and are full of pale yellow seeds lying in close rows. The plant was formerly called water-sedge, and its thin, sharp, sword-shaped leaves look, indeed, much like some of those which belong to the sedges, and which cluster thickly with the rushes at the water’s edge.

The sedges are those plants which look so green when they fringe a river, their sharp leaves often cutting the hand of him who would fain gather some blossoms near. The flowers of those sedges are simply brown

chaffy heads, often in clusters, sometimes rendered pretty by yellow anthers dotted over them.

Many lovers of flowers consider that the flowering rush is the handsomest of all aquatics. It certainly makes more show than even the water-lily, for it stands up far above the surface of the waters, and we see it before we reach them. Its sharp three-sided leaves inflict many a wound, and cut like thin glass deep into the skin. They look very handsome in their somewhat bluish-green colour, coming up from the root, and usually twisted at the top. The lovely cluster of rose-coloured three-petalled flowers is very large, each flower on a long stalk, which is often of a reddish colour.

We could wish that our landscape could boast more often of the water-violet, for it is one of the prettiest plants of our still waters, but is not at all like a violet. Its white fibrous roots creep among the soft muddy soil; the hollow flower-stalk rises a little above the surface, having around it whorls of lilac blossoms, and the elegant feathery leaves float below. It is called feather-foil, from the foliage.

The edges of the waters are often green with the clumps of water-cresses—the “cresses glossy wet”—which are gathered often by dawn of day by the humble poor, and brought into towns for salad. The flowers are white, cross-shaped, and grow in small clusters. We are apt to leave them unnoticed when the bright blue enamel-like flowers of the forget-me-nots are studding the surface of the damp soil, having each a yellow eye with a little white rim, and which, while yet only half

expanded, are of pinkish colour and coiling round the tops of their stem, so as to have gained for the plant the name of scorpion-grass. If, however, we were to ask the name of this pretty flower of the natives of any part of Europe, we should find it synonymous with our own of forget-me-not, and we might see it everywhere given as the token of love and friendship. There is something remarkable in this fact ; for, pretty as it is, there are other wild flowers equally attractive, and it seems most probable that some incident really occurred which led to the general adoption of this as an expression of sentiment. Ask the German peasant why he calls it "Vergissmeinnicht," and he will tell you of the legend, so well known also in England, that a lady, while wandering with a knight by the borders of a stream decked with these lovely flowers, asked him to reach them ; and that, while doing so, the knight was borne off by the current, and could only utter the words "Forget me not," as he threw the fatal nosegay to the shore. In Germany and France this plant is often set upon tombs, but it will not flourish long without water.

ANNE PRATT (adapted).

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<i>a-quāt-ics</i>	<i>hānd-som-est</i>	<i>entangled</i>
<i>col'-oured</i>	<i>whorls</i>	<i>delicately</i>
<i>thread'-like</i>	<i>at-trāct-ive</i>	<i>conspicuous</i>
<i>heart'-shaped</i>	<i>beau'-ti-ful</i>	<i>endāmel</i>
<i>cōn-ic-al</i>	<i>beau'-te-ous</i>	<i>incident</i>
<i>en-closed</i>	<i>sug-gest-ed</i>	<i>crūmpled</i>

seg-ments, lit. a part cut off ; a part cut off from a figure by a line or plane. Lat. *sectum*, "to cut."

foils, contrasts to set off to advantage the qualities of something else.

sim-il-e, comparison ; expression of likeness.

rapáciously, greedily, like plunderers or robbers. Lat. *rapax*, "greedy of plunder," from *rapio*, "I seize."

syn-dn-ym-ous, having the same meaning. Grk. *syn*, "with," and *onoma*, "a name."

Ver-giss-mein-nicht (*Fer-gis-min*[mine]-*nicht*—*h* guttural), lit. "Forget-me-not."

UNDER THE WILLOW-TREE.

O SING unto my roundelay ;
 O drop the briny tear with me ;
 Dance no more at holiday ;
 Like a running river be ;
 My love is dead,
 Gone to his death-bed,
 All under the willow-tree.

Black his hair as the winter night,
 White his neck as summer snow,
 Ruddy his face as the morning light,
 Cold he lies in the grave below.
 My love is dead,
 Gone to his death-bed,
 All under the willow-tree.

Sweet his tongue as throstle's note,
 Quick in dance as thought can be ;

Deft his tabor, cudgel stout ;
 O, he lies by the willow tree !
 My love is dead,
 Gone to his death-bed
 All under the willow-tree.

Hark ! the raven flaps his wing
 In the brier'd dell below ;
 Hark ! the death-owl loud doth sing
 To the night-mares as they go.
 My love is dead,
 Gone to his death-bed,
 All under the willow-tree.

See, the white moon shines on high ;
 Whiter is my true love's shroud ;
 Whiter than the morning sky,
 Whiter than the evening cloud.
 My love is dead,
 Gone to his death-bed,
 All under the willow-tree.

CHATTERTON.

hɒl-i-day
will-ow-tree

thrɒstle
cudgel

night-mares
death'-bed

round-e-lay, lit. a little round ; *tá-bor*, small drum, played with a song in which parts are one stick.
 repeated. French, *rondelet*, *the brier'd dell*. Express more “roundish,” from *rond*, fully the meaning in “round.”
deft, clever, skilful.

WHAT IS WEALTH?

NASSAU SENIOR, one of the best writers on political economy, defined *wealth* in these words: *Under that term we comprehend all those things, and those things only, which are transferable, are limited in supply, and are directly or indirectly productive of pleasure, or preventive of pain.* It is necessary to understand, in the first place, exactly what Senior meant. According to him, whatever is comprehended under wealth must have three distinct qualities, and whatever has these three qualities must be a part of wealth. If these qualities are rightly chosen, we get a correct definition—that is, a precise statement of the qualities which are just sufficient to make out a class, and to tell us what things belong to it and what do not. Instead, however, of the long phrase “directly or indirectly productive of pleasure or preventive of pain,” we may substitute the single word *useful*, and we may then state the definition in this simple way:—

Wealth = what is $\left\{ \begin{array}{l} (1) \text{ transferable.} \\ (2) \text{ limited in supply.} \\ (3) \text{ useful.} \end{array} \right.$

We still need to learn exactly what is meant by the three qualities of wealth; we must learn what it is to be transferable, limited in supply, and useful.

Wealth is transferable. By being *transferable*, we mean that a thing can be passed over (Latin, *trans*,

across, and *fero*, I carry) from one person to another. Sometimes things can be literally handed over, like a watch or a book ; sometimes they can be transferred by a written deed, or by legal possession, as in the case of land and houses ; services, also, can be transferred, as when a footman hires himself to a master. Even a musician or a preacher transfers his services, when his auditors have the benefit of hearing him. But there are many desirable things which cannot be transferred from one person to another ; a rich man can hire a footman, but he cannot buy the footman's good health ; he can hire the services of the best physician, but if these services fail to restore health, there is no help. So, too, it is impossible really to buy or sell the love of relatives, the esteem of friends, the happiness of a good conscience. Wealth may do a great deal, but it cannot really ensure those things which are more precious than pearls and rubies. Political economy does not pretend to examine all the causes of happiness, and those moral riches which cannot be bought and sold are no part of wealth in our present use of the word. The poor man who has a good conscience, affectionate friends, and good health, may really be much happier than the rich man who is deprived of such blessings ; but, on the other hand, a man need not lose his good conscience, and his other sources of happiness, when he becomes rich and enjoys all the interesting occupations and amusements which wealth can give. *Wealth, then, is far from being the only good thing : nevertheless it is good*, because it saves us from too severe labour, from the fear

of actual want, and enables us to buy such pleasant things and services as are transferable.

Wealth is limited in supply. In the second place, things cannot be called wealth unless they be *limited in supply*; if we have just as much of any substance as we want, then we shall not esteem a new supply of it. Thus the air around us is not wealth in ordinary circumstances, because we have only to open our mouths and we get as much as we can use. What air we do actually breathe is exceedingly useful, because it keeps us alive; but we usually pay nothing for it, because there is plenty for all. In a diving bell, or a deep mine, however, air becomes limited in supply, and then may be considered a part of wealth. When the tunnel under the English Channel is completed, it will be a great question how to get air to breathe in the middle of it. Even in the Metropolitan Railway tunnel a little more fresh air would be very valuable.

On the other hand diamonds, though much valued, are used for few purposes; they make beautiful ornaments and they serve to cut glass or to bore rocks. Their high value chiefly arises from the fact that they are scarce. Of course scarcity alone will not create value. There are many scarce metals, or minerals, of which only a few little bits have ever yet been seen; but such substances are not valuable, unless some special use has been found for them. The metal iridium is sold at a very high price because it is wanted for making the tips of gold pens, and can be got only in small quantities.

Wealth is useful. In the third place, we can easily see that everything which forms a part of wealth must be *useful*, or have *utility*; that is, it must serve some purpose, or be agreeable and desirable in some way or other. Senior said correctly that *useful things are those which directly or indirectly produce pleasure or prevent pain.* A well tuned and well played musical instrument produces pleasure; a dose of medicine prevents pain to one who is in need of it. But it is often impossible to decide whether things give more pleasure or prevent more pain; dinner saves us from the pain of hunger and gives us the pleasure of eating good things. There is utility so far as pleasure is increased and pain decreased; nor does it matter, as far as political economy is concerned, what is the nature of the pleasure.

Then, again, we need not be particular as to whether things *directly produce pleasure*, like the clothes we wear, or whether they *indirectly* do so, as in the case of the machines employed to make the clothes. Things are indirectly useful when, like tools, machines, materials, &c., they are only wanted to make other things which shall be actually consumed and enjoyed by some person. The carriage in which a person takes a pleasant drive is directly useful; the baker's cart which brings him food is indirectly useful. But sometimes we can hardly distinguish. Shall we say that the meat put into the mouth is directly, but the fork which puts it in is indirectly, useful?

W. STANLEY JEVONS.

<i>trans-fer-a-ble</i>	<i>di-rèct-ly</i>	<i>definition</i>
<i>lit-er-al-ly</i>	<i>in-di-rèct-ly</i>	<i>musician</i>
<i>af-fec-tion-ate</i>	<i>con-science</i>	<i>physician</i>
<i>pre-vènt-ive</i>	<i>a-muse'-ment</i>	<i>precious</i>
<i>con-cèrned</i>	<i>in-creased'</i>	<i>qual'ties</i>
<i>ac-tù-al-ly</i>	<i>de-creased'</i>	<i>quan'tities</i>

political economy is the science that treats of wealth. It inquires what wealth is; how we can best consume it when we have got it; how it may be produced in the greatest quantities with the least possible labour; and how it is shared among those that have a hand in producing it.

com-prè-hend, take together, include. Lat. *com* (*con*),

“together,” and *prehendo*, “I take, or lay hold of.”

pre-cise (-*sis*), exact, definite.

auditor (*aud-i-tor*), hearer. Lat. *audio*, “I hear.”

Me-tro-pol-it-an, in, of, or belonging to the metropolis (London, in this case), or capital. Grk. *mèter*, “mother,” and *polis*, “city.” *utility*, usefulness. Lat. *utilis*, “useful,” from *utor*, “I use.”

THE FORSAKEN MERMAN.

COME, dear children, let us away;
 Down and away below!
 Now my brothers call from the bay;
 Now the great winds shorewards blow;
 Now the salt tides seawards flow;
 Now the wild white horses play,
 Champ and chafe and toss in the spray.

Children dear, let us away !
This way, this way !

Call her once before you go—
Call once yet,
In a voice that she will know :
“ Margaret ! Margaret ! ”
Children’s voices should be dear
(Call once more) to a mother’s ear :
Children’s voices wild with pain—
Surely she will come again.
Call her once, and come away ;
This way, this way !
“ Mother dear, we cannot stay ! ”
The wild white horses foam and fret,
Margaret ! Margaret !

Come, dear children, come away down !
Call no more !
One last look at the white-walled town,
And the little grey church on the windy shore ;
Then come down !
She will not come though you call all day.
Come away, come away !

Children dear, was it yesterday
We heard the sweet bells over the bay ?
In the caverns where we lay,
Through the surf and through the swell,
The far-off sound of a silver bell ?

Sand-strewn caverns cool and deep,
Where the winds are all asleep ;
Where the spent lights quiver and gleam ;
Where the salt weed sways in the stream ;
Where the sea-beasts rang'd all round
Feed in the ooze of their pasture ground :
Where the sea-snakes coil and twine,
Dry their mail and bask in the brine ;
Where great whales come sailing by,
Sail and sail, with unshut eye,
Round the world forever and aye ?

When did music come this way ?
Children dear, was it yesterday ?

Children dear, was it yesterday
(Call yet once) that she went away ?
Once she sate with you and me,
On a red gold throne in the heart of the sea ;
And the youngest sate on her knee ;
She comb'd its bright hair, and she tended it well,
When down swung the sound of the far-off bell.
She sigh'd, she look'd up through the clear green sea ;
She said : " I must go, for my kinsfolk pray
In the little grey church on the shore to-day.
'Twill be Easter-time in the world—ah me !
And I lose my poor soul, Merman, here with thee."
I said : " Go up, dear heart, through the waves :
Say thy prayer, and come back to the kind sea-caves."
She smiled, she went up through the surf in the bay.
Children dear, was it yesterday ?

Children dear, were we long alone ?
“ The sea grows stormy, the little ones moan ;
Long prayers,” I said, “ in the world they say.”
“ Come ! ” I said, and we rose through the surf in the
bay.
We went up the beach, by the sandy down
Where the sea-stocks bloom, to the white-walled town,
Through the narrow paved streets, where all was still,
To the little grey church on the windy hill.
From the church came a murmur of folk at their
prayers,
But we stood without in the cold blowing airs.
We climb’d on the graves, on the stones, worn with
rains,
And we gazed up the aisle through the small-leaded
panes.
She sat by the pillar ; we saw her clear ;
“ Margaret, hist ! come quick, we are here.
Dear heart,” I said, “ we are long alone.
The sea grows stormy, the little ones moan.”
But, ah, she gave me never a look,
For her eyes were seal’d to the holy book.
“ Loud prays the priest ; shut stands the door.”
Come away, children, call no more !
Come away, come down, call no more !

Down, down, down !
Down to the depths of the sea !
She sits at her wheel in the humming town,
Singing most joyfully.

Hark what she sings : " O joy, O joy,
For the humming street, and the child with its toy,
For the priest, and the bell, and the holy well,

For the wheel where I spun,
And the bless'd light of the sun ! "
And so she sings her fill,
Singing most joyfully,
Till the shuttle falls from her hand,
And the whizzing wheel stands still.

She steals to the window, and looks at the sand,
And over the sand at the sea ;
And her eyes are set in a stare ;
And anon there breaks a sigh,
And anon there drops a tear,
From a sorrow-clouded eye,
And a heart sorrow-laden,
A long, long sigh

For the cold strange eyes of a little Mermaiden,
And the gleam of her golden hair.

Come away, away, children,
Come, children, come down !
The hoarse wind blows colder ;
Lights shine in the town.
She will start from her slumber
When gusts shake the door ;
She will hear the winds howling,
Will hear the waves roar.
We shall see, while above us
The waves roar and whirl,

A ceiling of amber,
A pavement of pearl.
Singing : "Here came a mortal,
But faithless was she !
And alone dwell forever
The kings of the sea."

But, children, at midnight,
When soft the winds blow,
When clear falls the moonlight,
When spring-tides are low ;
When sweet airs come seaward
From heaths starr'd with broom ;
And high rocks throw mildly
On the blanch'd sands a gloom :
Up the still, glistening beaches,
Up the creeks we will hie,
Over banks of bright seaweed
The ebb-tide leaves dry.
We will gaze, from the sand-hills,
At the white sleeping town ;
At the church on the hill-side—
And then come back, down.
Singing : "There dwells a loved one,
But cruel is she !
She left lonely forever
The kings of the sea."

MATTHEW ARNOLD.



THE MAN IN BLACK.

THOUGH fond of many acquaintances, I desire an intimacy only with a few. The Man in Black, whom I have often mentioned, is one whose friendship I could wish to acquire, because he possesses my esteem. His manners, it is true, are tinctured with some strange inconsistencies; and he may be justly termed a humorist in a nation of humorists. Though he is generous even to profusion, he affects to be thought a prodigy of parsimony and prudence; though his conversation

be replete with the most sordid and selfish maxims, his heart is dilated with the most unbounded love. I have known him profess himself a man-hater, while his cheek was glowing with compassion; and, while his looks were softened into pity, I have heard him use the language of the most unbounded ill-nature. Some affect humanity and tenderness, others boast of having such dispositions from nature; but he is the only man I ever knew who seemed ashamed of his natural benevolence. He takes as much pains to hide his feelings, as any hypocrite would to conceal his indifference; but on every unguarded moment the mask drops off, and reveals him to the most superficial observer.

In one of our late excursions into the country, happening to discourse upon the provision that was made for the poor in England, he seemed amazed how any of his countrymen could be so foolishly weak as to relieve occasional objects of charity, when the laws had made such ample provision for their support. "In every parish-house," says he, "the poor are supplied with food, clothes, fire, and a bed to lie on; they want no more, I desire no more myself; yet still they seem discontented. I am surprised at the inactivity of our magistrates, in not taking up such vagrants, who are only a weight upon the industrious; I am surprised that the people are found to relieve them, when they must be at the same time sensible that it in some measure encourages idleness, extravagance, and imposture. Were I to advise any man

for whom I had the least regard, I would caution him by all means not to be imposed upon by their false pretences : let me assure you, sir, they are impostors, every one of them, and rather merit a prison than relief."

He was proceeding in this strain, earnestly to dissuade me from an imprudence of which I am seldom guilty, when an old man, who still had about him the remnants of tattered finery, implored our compassion. He assured us that he was no common beggar, but forced into the shameful profession to support a dying wife and five hungry children. Being prepossessed against such falsehoods, his story had not the least influence upon me ; but it was quite otherwise with the Man in Black : I could see it visibly operate upon his countenance, and effectually interrupt his harangue. I could easily perceive that his heart burned to relieve the five starving children, but he seemed ashamed to discover his weakness to me. While he thus hesitated between compassion and pride, I pretended to look another way, and he seized this opportunity of giving the poor petitioner a piece of silver, bidding him at the same time, in order that I should hear, go work for his bread, and not tease passengers with such impertinent falsehoods for the future.

As he had fancied himself quite unperceived, he continued, as we proceeded, to rail against beggars with as much animosity as before : he threw in some episodes on his own amazing prudence and economy, with his

profound skill in discovering impostors ; he explained the manner in which he would deal with beggars were he a magistrate, hinted at enlarging some of the prisons for their reception, and told two stories of ladies that were robbed by beggar-men. He was beginning a third to the same purpose, when a sailor with a wooden leg once more crossed our walks, desiring our pity, and blessing our limbs. I was for going on without taking any notice, but my friend, looking wistfully upon the poor petitioner, bid me stop, and he would show me with how much ease he could at any time detect an impostor.

He now, therefore, assumed a look of importance, and in an angry tone began to examine the sailor, demanding in what engagement he was thus disabled and rendered unfit for service. The sailor replied, in a tone as angrily as he, that he had been an officer on board a private ship of war, and that he had lost his leg abroad, in defence of those who did nothing at home. At this reply, all my friend's importance vanished in a moment ; he had not a single question more to ask ; he now only studied what method he should take to relieve him unobserved. He had, however, no easy part to act, as he was obliged to preserve the appearance of ill-nature before me, and yet relieve himself by relieving the sailor. Casting, therefore, a furious look upon some bundles of chips which the fellow carried in a string at his back, my friend demanded how he sold his matches ; but, not waiting for a reply, desired, in a surly tone, to have a shilling's worth. The sailor seemed at first surprised at his demand, but soon recollecting himself,

and presenting his whole bundle, "Here, master," says he, "take all my cargo, and a blessing into the bargain."

It is impossible to describe with what an air of triumph my friend marched off with his new purchase: he assured me that he was firmly of opinion that those fellows must have stolen their goods, who could thus afford to sell them for half value. He informed me of several different uses to which those chips might be applied; he expatiated largely upon the savings that would result from lighting candles with a match, instead of thrusting them into the fire. He averred that he would as soon have parted with a tooth as his money to those vagabonds, unless for some valuable consideration. I cannot tell how long this panegyric upon frugality and matches might have continued, had not his attention been called off by another object more distressful than either of the former. A woman in rags, with one child in her arms, and another on her back, was attempting to sing ballads, but with such a mournful voice, that it was difficult to determine whether she was singing or crying. A wretch, who in the deepest distress still aimed at good-humour, was an object my friend was by no means capable of withstanding: his vivacity and his discourse were instantly interrupted; upon this occasion, his very dissimulation had forsaken him. Even in my presence he immediately applied his hands to his pockets, in order to relieve her; but guess his confusion when he found he had already given away all the money he carried about him to former objects. The misery painted in the woman's visage was not half

so strongly expressed as the agony in his. He continued to search for some time, but to no purpose, till, at length recollecting himself, with a face of ineffable good-nature, as he had no money, he put into her hands his shilling's worth of matches.

GOLDSMITH.

ac-quaint'-ance	hyp-o-crite	in-con-sist-en-cies
hum'-or-ist (yúm-)	guilt-y	be-nè-vol-ence
pro-fu'-sion (-fyú-)	hès-it-ăt-ed	ma-gis-trates
di-lát-ed	im-pèr-tin-ent	in-dùs-tri-ous
un-guārd-ed	früg-ăl-i-ty	im-prid-ence
earn'-est-ly (èrn-)	in-ter-rupt-ed	re-col-lect-ing

in-tim-ă-cy, inner knowledge, close friendship. Lat. *intimus*, "inmost."

tinctured, tinged, slightly coloured. Lat. *tinctura*, "a dyeing," from *tinctum* (*tingo*), "to wet, dye, tinge."

parsimony, sparingness, niggardliness, stinginess. Lat. *parsimonia*, "frugality, thrift," from *parco*, "I spare."

in-dif-fer-ence, carelessness, unconcernedness; state of mind in which one course does not appear to differ in importance from another.

sup-er-fi-ci-al, shallow, looking merely to what lies on the surface. Lat. *superficies*,

"the surface, or upper face;" from *super*, "above," and *facies*, "the face."

vág-rant, a wanderer, an idle fellow strolling about the country and begging. Lat. *vagari*, "to wander about."

vág-a-bond, a wandering, idle fellow. Lat. *vagabundus*, from *vagari*, "to wander."

ex-trà-vag-ance, excessive expenditure, excess. Lat. *extra*, "beyond" (what is reasonable or necessary), and *vagari*, "to wander."

im-pôst-ure, deceit, fraud, imposition. Lit., the laying on of something; hence, the laying on of something that ought not to be laid on.

Lat. *im* (*in*), "upon," and *positum*, "to place, or lay." *dis-suáde*, advise to the contrary. Lat. *dis*, "asunder," and *suádeo*, "I advise, persuade."

pré-pos-séssed, possessed before-hand (by some opinion or view); biased.

harángue (*ha-ràng*), a long speech, or popular address. *án-im-ðs-i-ty*, excitement of mind (against something), hatred, angry feeling. Lat. *animosus*, from *animus*, "mind."

ép-is-odes, stories *coming in* (in the midst of a long narrative); incidents; incidental stories. Grk. *epi*, "upon," *eis*, "into," and *hòdos*, "a way."

expátiated (*expásh-i-ăt-ed*), spoke at great length; lit., wandered *out of the proper*

space, course, or field. Lat. *ex*, "out," and *spatiōr*, "I walk," from *spatiūm*, "race-course; walk; space."

a-vér, affirm, declare as true.

French, *avérer*, from Lat. *a* (*ud*), "to," and *verus*, "true."

pan-e-gyr-ic, a discourse in warm praise of some person or thing.

vivácity, liveliness, animation.

Lat. *vivax*, "tenacious of life, full of life," from *vivo*, "I live."

dis-sim-ăl-á-tion (-*yăl*), concealment of one's real feelings or opinions by professing others; hypocrisy. Lat. *dis*, "asunder, or in a contrary sense," and *simulo*, "I pretend."

in-ef-fa-ble, unspeakable, unutterable. Lat. *in*, "not," *ef* (*e*), "out," and *fari*, "to speak."

The teacher may explain the nature of the balanced structure of a sentence; and the pupils may find out and compare a few examples.



FROM THE BANKS OF THE RHINE.

THE castled crag of Drachenfels
Frowns o'er the wide and winding Rhine,
Whose breast of waters broadly swells,
Between the banks which bear the vine ;
And hills all rich with blossomed trees,
And fields which promise corn and wine,
And scattered cities crowning these,
Whose far white walls along them shine,
Have strewed a scene which I should see
With double joy wert *thou* with me !

And peasant girls, with deep-blue eyes,
And hands which offer early flowers,
Walk smiling o'er this paradise ;
Above, the frequent feudal towers
Through green leaves lift their walls of gray,
And many a rock which steeply lours,
And noble arch in proud decay,
Look o'er this vale of vintage-bowers ;
But one thing want these banks of Rhine—
Thy gentle hand to clasp in mine !

I send the lilies given to me,
Though long before thy hand they touch,
I know that they must withered be ;
But yet reject them not as such ;

For I have cherished them as dear,
 Because they yet may meet thine eye,
 And guide thy soul to mine even here,
 When thou behold'st them drooping nigh,
 And know'st them gathered by the Rhine,
 And offered from my heart to thine !

The river nobly foams and flows,
 The charm of this enchanted ground,
 And all its thousand turns disclose
 Some fresher beauty varying round ;
 The haughtiest breast its wish might bound
 Through life to dwell delighted here ;
 Nor could on earth a spot be found
 To nature and to me so dear,
 Could thy dear eyes in following mine
 Still sweeten more these banks of Rhine !

BYRON.

blossomed
scattered

paradise
feud'al

cherished
enchanted

Drächenfels, or “Dragon’s Rock,” rises 900 feet above the Rhine, on its right bank, a little higher up than Bonn. The castle is in ruins; it was built in the 12th century by an Archbishop of Cologne.

The fabled cavern of the dragon is half-way up the crag.

thou, the poet’s sister.

haught-i-est (*hōt-*), proudest. French, *hautain*, from *haut*, “high,” Lat. *altus*, “high.”

THE PEASANT RISING.

[The victory of Cressy was the first of a series of successes which placed England high among military powers and forced France by the Treaty of Bretigny to grant to Edward full sovereignty of Aquitaine and the possession of Calais. But war brought with it suffering: and both countries shared in the terrible scourge of the plague which was called the Black Death. To the suffering caused by war and pestilence was added at the close of Edward's reign the shame of defeat. While England was exhausted by its victories, France woke to a fresh energy, and refusing to fulfil the terms of peace, stripped Edward of all his conquests save Calais, and in union with Castile made herself mistress of the seas and ruined English commerce. Money was squandered in desperate efforts to regain the old supremacy in the field; and the pressure of taxation drove England to despair. The death of Edward the Third left the crown to his grandson, a boy named Richard the Second; and the country felt the weakness of the government in a general disorder. Still the war called for money; and the Parliament were driven to raise money by a tax, not as of old on lands, but on every man and woman personally, "by head," which was hence called a poll-tax. This was levied from people who had till now been free from taxation, and who were just awaking to the injustice of their state as "serfs," or bondsmen, bound to do service in labour on their lords' lands. A preacher named John Ball fanned the discontent into a temper of rebellion; and in 1381 the commons rose in the Peasant Revolt.]

As the spring went by, quaint rimes passed through the country, and served as a summons to revolt. "John Ball," ran one, "greeteth you all, and doth for to understand he hath rung your bell. Now right and might will and skill, God speed every dele." "Help truth," ran another, "and truth shall help you! Now reigneth pride in price, and covetise is counted wise, and lechery

withouten shame, and gluttony withouten blame. Envy reigneth with treason, and sloth is take in great season. God do bote, for now is tyme!" We recognize Ball's hand in the yet more stirring missives of "Jack the Miller" and "Jack the Carter." "Jack Miller asketh help to turn his mill aright. He hath grounden small, small: the King's Son of Heaven he shall pay for all. Look thy mill go aright with the four sailes, and the post stand with steadfastness. With right and with might, with skill and with will; let might help right, and skill go before will, and right before might, so goeth our mill aright." "Jack Carter," ran the companion missive, "prays you all that ye make a good end of that ye have begun, and do well, and aye better and better: for at the even men heareth the day." "Falseness and guile," sang Jack Trewman, "have reigned too long, and truth hath been set under a lock, and falseness and guile reigneth in every stock. No man may come truth to, but if he sing 'si dedero.' True love is away that was so good, and clerks for wealth work them woe. God do bote, for now is time." In the rude jingle of these lines began for England the literature of political controversy; they are the first predecessors of the pamphlets of Milton and of Burke. Rough as they are, they express clearly enough the mingled passions which met in the revolt of the peasants; their longing for a right rule, for plain and simple justice; their scorn of the immorality of the nobles and the infamy of the court; their resentment at the perversion of the law to the cause of oppression.

From the eastern and midland counties the restlessness spread to all England south of the Thames. But the grounds of discontent varied with every district. The actual outbreak began on the fifth of June at Dartford, where a tiler killed one of the collectors of the poll-tax, in vengeance for a brutal outrage on his daughter. The county at once rose in arms. Canterbury, where "the whole town was of their mind," threw open its gates to the insurgents, who plundered the Archbishop's palace and dragged John Ball from his prison. A hundred thousand Kentishmen gathered round Walter Tyler of Essex and John Hales of Malling to march upon London. Their grievance was mainly a political one. Villeinage was unknown in Kent. As the peasants poured towards Blackheath, indeed, every lawyer who fell into their hands was put to death; "not till all these were killed would the land enjoy its old freedom again," the Kentishmen shouted, as they fired the houses of the stewards, and flung the rolls of the manor-courts into the flames. But this action can hardly have been due to anything more than sympathy with the rest of the realm, the sympathy which induced the same men, when pilgrims from the north brought news that John of Gaunt was setting free his bondmen, to send to the Duke an offer to make him Lord and King of England. Nor was their grievance a religious one. Lollardry can have made little way among men whose grudge against the Archbishop of Canterbury sprang from his discouragement of pilgrimages. Their discontent was simply political; they demanded the suppression of the poll-tax, and

better government; their aim was to slay the nobles and wealthier clergy, to take the King into their own hands, and pass laws which should seem good to the Commons of the realm.

The whole population joined the Kentishmen as they marched along; while the nobles were paralyzed with fear. The young King—he was but a boy of sixteen—addressed them from a boat on the river; but the refusal of his Council, under the guidance of Archbishop Sudbury, to allow him to land, kindled the peasants to fury, and with cries of “Treason” the great mass rushed on London. On the 13th of June its gates were flung open by the poorer artisans within the city, and the stately palace of John of Gaunt at the Savoy, the new inn of the lawyers at the Temple, the houses of the foreign merchants, were soon in a blaze. But the insurgents, as they proudly boasted, were “seekers of truth and justice, not thieves or robbers,” and a plunderer found carrying off a silver vessel from the sack of the Savoy was flung with his spoil into the flames. Another body of insurgents encamped at the same time to the east of the city. In Essex and the eastern counties the popular discontent was more social than political. The demands of the peasants were that bondage should be abolished, that tolls and imposts on trade should be done away with, that “no acre of land which is held in bondage or villeinage be held at higher rate than 4d. a year,” in other words, a money commutation of all villein services. Their rising had been even earlier than that of the Kentishmen. Before Whitsuntide an attempt to levy

the poll-tax gathered crowds of peasants together, armed with clubs, rusty swords, and bows. The royal commissioners who were sent to repress the tumult were driven from the field, and the Essex men marched upon London on one side of the river as the Kentishmen marched on the other. The evening of the 13th, the day on which Tyler entered the city, saw them encamped without its walls at Mile-end. At the same moment Highbury and the northern heights were occupied by the men of Hertfordshire and the villeins of St. Albans, where a strife between abbot and town had been going on since the days of Edward the Second.

The Royal Council with the young King had taken refuge in the Tower, and their aim seems to have been to divide the forces of the insurgents. On the morning of the 14th, therefore, Richard rode from the Tower to Mile-end to meet the Essex men. "I am your King and Lord, good people," the boy began with a fearlessness which marked his bearing throughout the crisis, "what will you?" "We will that you free us for ever," shouted the peasants, "us and our lands; and that we be never named nor held for serfs!" "I grant it," replied Richard; and he bade them go home, pledging himself at once to issue charters of freedom and amnesty. A shout of joy welcomed the promise. Throughout the day more than thirty clerks were busy writing letters of pardon and emancipation, and with these the mass of the Essex men and the men of Hertfordshire withdrew quietly to their homes. But while the King was successful at Mile-end, a terrible doom had fallen on the

councillors he left behind him. Richard had hardly quitted the Tower when the Kentishmen, who had spent the night within the city, appeared at its gates. The general terror was shown ludicrously enough when they burst in, and taking the panic-stricken knights of the royal household in rough horse-play by the beard, promised to be their equals and good comrades in the days to come. But the horse-play changed into dreadful earnest when they found that Richard had escaped their grasp, and the discovery of Archbishop Sudbury and other ministers in the chapel changed their fury into a cry for blood. The Primate was dragged from his sanctuary and beheaded. The same vengeance was wreaked on the Treasurer and the Chief Commissioner for the levy of the hated poll-tax, the merchant Richard Lyons, who had been impeached by the Good Parliament.

Richard meanwhile had ridden round the northern wall of the city to the Wardrobe near Blackfriars, and from this new refuge he opened his negotiations with the Kentish insurgents. Many of these dispersed at the news of the King's pledge to the men of Essex, but a body of thirty thousand still surrounded Wat Tyler when Richard on the morning of the 15th encountered that leader by a mere chance at Smithfield. Hot words passed between his train and the peasant chieftain, who advanced to confer with the King, and a threat from Tyler brought on a brief struggle in which the Mayor of London, William Walworth, struck him with his dagger to the ground. "Kill! kill!" shouted the crowd, "they have slain our captain!" But Richar-

faced the Kentishmen with the same cool courage with which he faced the men of Essex. "What need ye, my masters?" cried the boy-king, as he rode boldly up to the front of the bowmen; "I am your Captain and your King! Follow me!" The hopes of the peasants centred in the young sovereign; one aim of their rising had



been to free him from the evil counsellors who, as they believed, abused his youth; and at his word they followed him with a touching loyalty and trust till he entered the Tower. His mother welcomed him within its walls with tears of joy. "Rejoice and praise God," Richard answered, "for I have recovered to-day my heritage which was lost and the realm of England!" But he

was compelled to give the same pledge of freedom to the Kentishmen as at Mile-end, and it was only after receiving his letters of pardon and emancipation that the yeomen dispersed to their homes.

J. R. GREEN.

stead'-fast-ness

re-sent-ment

per-vér-sion

sym-path-y

con-tro-ver-sy

dis-cour-age-ment

pàmph-lets

pìl-grim-age

guíd-ance

yeo'-men

lúd-i-crous-ly

com-mis-sion-ers

mìlitary

sov'reignty

squan'dered

rebèllion

literature

political

si-l-prèm-a-cy, superiority, highest power, upper hand. Lat. *supremus*, "highest."
quaint, queer, odd, whimsical.
rimes, lines or verses that rhyme (rhyme), or sound similarly at the end.

dele (*dél*), deal, part; "every one's effort."

cov'-et-ise, greed.

take, taken, held.

bote, help.

mis-sives, messages, letters.

Lat. *missum*, "to send."

si dedero, Lat., lit. "if I have given;" "unless he gives bribes to the judges."

pré-dé-céss-or, one that precedes another in the same office or position. Lat. *præ*, "before," *de*, "down, or away," and *cessum*, "to go."

im-mor-ál-i-ty, want of moral conduct, bad life. Lat. *im* (in), "not," and *moralis*, from *mores*, (good) manners, conduct.

in-fam-y, bad name, shame. Lat. *in*, "not," and *fama*, "fame, (good) report."

Därt-ford, in Kent.

in-surg-ents (-*súrj-*), rebels; those that rise up against the laws. Lat. *in*, "upon," and *surgens*, "rising."

prison. John Ball "had been thrown into prison for seditious preaching."

griev-ance, cause of grieving, or complaint.

vill-ein-age, "the state of the serf or villein, who was bound to labour for a lord and might not quit his lands."

Lat. *villanus*, one belonging to a *villa*, or country estate. *the rolls of the manor-courts.*

The services due by the villeins were recorded in these.

Loll-ard-ry. "In Edward the Third's day John Wiclif had taught a new and reformed religion. His followers were called Lollards." (Green.)

pár-a-lýzed, made nerveless, deprived of strength and the power of action. Grk. *para*, "beside, at the side of," and *lusis*, "a loosening," from *luo*, "I loose."

the young king. Richard the Second; born 1366.

John of Gaunt. "The Duke of Lancaster, the King's uncle, who was hated by the people."

com-mut-á-tion (-*myüt-*), change

(of a penalty or burden, to something less severe). Lat. *com*, "together," and *muto*, "I change"; that is, "I change wholly."

amnesty (àm-nës-ty), a general pardon of past offences; lit., the not remembering them. Grk. *amnestia*, from *a*, "not," and *memnëmai*, "I remember."

é-mán-cip-á-tion, setting free from serfdom or slavery; freedom.

sanc-tü-ar-y, holy place. Lat. *sanctus*, "sacred."

negótiá-tions (në-gó-shi-á-tions), business transactions, bargainings. Lat. *negotium*, "business."

hér-it-age, the estate that one inherits, or obtains as heir of another. Lat. *hæres*, "an heir."





THE USEFUL PLOUGH.

A COUNTRY life is sweet !
In moderate cold and heat,
To walk in the air, how pleasant and fair,
In every field of wheat,
The fairest of flowers adorning the bowers,
And every meadow's brow ;
So that I say, no courtier may
Compare with them who clothe in gray,
And follow the useful plough.

They rise with the morning lark,
And labour till almost dark ;

Then folding their sheep, they hasten to sleep ;
While every pleasant park

Next morning is ringing with birds that are
singing,

On each green, tender bough.

With what content and merriment,
Their days are spent, whose minds are bent
To follow the useful plough !

Old Song.

THE OSTRICH.

THE head of the ostrich is naked and callous, with a short bill much depressed and rounded at the point; its legs are half-naked, muscular, and fleshy; the tarsi are long and rough, terminating in two toes pointing forward, one of which is shorter than the other and has no claw; the wings are very short, and formed of soft and flexible feathers, the tail taking the form of a plume.

There is but one species of the ostrich; it is sparsely diffused over the interior of Africa, and is rarely found in Asia, except perhaps in Arabia. It generally measures six feet in height, and occasionally attains nine feet; its weight varies from twenty to a hundred pounds.

The ostrich has been known from the most remote antiquity. It is spoken of in the sacred writings, for

Moses forbade the Hebrews to eat of its flesh, as being "unclean food." The Romans, however, far from sharing the views of the Jewish legislator, considered it a great culinary luxury. In the days of the Emperors they were consumed in considerable numbers; and we read that the luxurious Heliogabalus carried his magnificence so far as to cause a dish composed of the brains of six hundred ostriches to be served at a feast: this must have cost an almost incalculable sum. In former days it was a favourite dish with the tribes of Northern Africa. At the present date the Arabs content themselves with using its fat as an outward application in certain diseases, especially rheumatic affections; and they derive from it, as they say, very beneficial effects.

The natives of Africa call the ostrich "the camel of the desert." There is, in fact, some likeness between them. This resemblance consists in the length of the neck and legs, in the form of the toes, and in the callosities which are found on the lower stomach of both. In some of their habits they also resemble each other: the ostrich lies down in the same way as the camel, by first bending the knee, then leaning forward, and letting its hinder-quarters sink down last of all.

The ostrich is extremely voracious. Although the senses of sight and hearing are so highly developed that it is said to distinguish objects six miles off, and the slightest sounds excite its ear, the senses of taste and smell are very imperfect. This is the explanation given for its readiness to swallow inedible substances. In a wild state it takes into its stomach large pebbles,

to increase its digestive powers; in captivity it gorges bits of wood and metal, pieces of glass, plaster, and chalk, probably with the same object. Herbage, insects, molluscs, small reptiles, and even small animals, are the principal food of the wild ostrich; when it is in a state of domesticity, even young chickens are frequently devoured by it. It is capable of enduring hunger and thirst for many days—about the most useful faculty it could possess in the arid and burning deserts which it inhabits; but it is quite a mistake to suppose it never drinks, for it will travel immense distances in search of water when it has suffered a long deprivation, and will then drink it with evident pleasure.

The muscular power of the ostrich is truly surprising. If matured, it can carry a man on its back, and is readily trained to be mounted like a horse, and to bear a burden. When it first feels the weight of its rider, the ostrich starts at a slow trot; it, however, soon gets more animated, and, stretching out its wings, takes to running with such rapidity, that it seems scarcely to touch the ground. To the wild animals which range the desert it offers a successful resistance by kicking, the force of which is so great, that a blow in the chest is sufficient to cause death.

Man succeeds in capturing the ostrich only by stratagem. The Arab, on his swiftest courser, would fail to get near it if he did not by his intelligence supply the deficiency in his physical powers. "The legs of an ostrich running at full speed," says Dr. Livingstone, "can no more be seen than the spokes in the wheel of

a vehicle drawn at a gallop." According to the same author, the ostrich can run about thirty miles in an hour, a speed and endurance much surpassing those of the swiftest horse. The Arabs, well acquainted with these facts, follow them for a day or two at a distance, without pressing too closely, yet sufficiently near to prevent them from taking food. When they have thus starved and wearied the birds, they pursue them at full speed, taking advantage of the fact which observation has taught them, that the ostrich never runs in a straight line, but describes a curve of greater or less extent. Availing themselves of this habit, the horsemen gradually get within reach, when, making a final dash, they rush impetuously on the harassed birds, and beat them down with their clubs, avoiding, as much as possible, shedding blood, as this lowers the value of the feathers, which are the chief inducement for their pursuit.

Some tribes attain their object by a rather singular artifice. The hunter covers himself with an ostrich's skin, passing his arm up the neck of the bird so as to render the movements more natural. By the aid of this disguise, if skilfully managed, ostriches can be approached sufficiently near to kill them. The Arabs also hunt the ostrich with dogs, which pursue it until it is completely worn out. In the breeding season, having sought and found out where the ostriches lay their eggs, they practice another artifice. Within gunshot of the spot, they dig a hole, in which a man, armed with a gun, can hide himself. The concealed enemy easily kills the male and female birds in turn, as they sit on their nest.

Lastly, to lie in wait for them close by water, and shoot them when they come to quench their thirst, is often successful.

The ostrich, which is a very sociable bird, may sometimes be seen in flocks of two or three hundred,



mixed up with droves of zebras, quaggas, and other animals.

The nest of the ostrich is more than three feet in diameter; it is only a hole dug in the sand, and surrounded by a kind of rampart composed of the sand

dug out; a trench is scratched round it outside, to drain off the water. Each hen-bird lays from fifteen to twenty eggs. The eggs weigh from two to three pounds, and are each of them equal in contents to about twenty-five hen eggs. They are of a tolerable flavour, and often form a very seasonable meal to travellers, one of them being more than sufficient for the breakfast of two or three persons.

It is a strange circumstance that the cry of the ostrich so much resembles that of the lion when in search of prey that they are often confused. Dr. Livingstone says that with all his experience he has been frequently deceived, and that only the quick ear of a native can detect the difference.

Want of affection for her progeny was long such a subject of reproach to the ostrich, that she was looked upon as the most striking example of the hard-hearted mother. All such accusations are quite unfounded. The ostrich does not abandon her eggs; but she sits on them during the night only, the burning heat of the sun during the day being sufficient to maintain the necessary degree of warmth. Neither does she desert her young, although they are well covered at their birth with a thick warm down, and can from the first run about and provide for their own wants. On the contrary, she keeps them near her until they are almost full-grown, and defends them against every enemy. Mr. Cumming, with his companions, came suddenly one day on a dozen young ostriches, no larger than a full-grown grouse. "The mother," he says, "tried all she could

to deceive us, just like a wild duck : first she ran away, extending her wings ; then she threw herself on the ground, as if she were wounded ; whilst the male bird cunningly conducted the young ones in an opposite direction."

In spite of its great strength, perhaps even on account of it, the ostrich, when unmolested, is the most peaceable creature in the world ; and owing to its inoffensive nature, it readily becomes domesticated. If captured young, it can be tamed in a very short time. General Daumas asserts that they play with the children, and frolic with the horses and dogs, and other animals. In the district of Sennaar they are reared as we rear fowls ; they are left to wander about as they choose, and one of them attempting to escape is a thing quite unheard of. They accompany the herds to pasture, returning to their homes at the hours for meals. Kindness and caresses are sufficient to attach them to any one ; but care must be taken never to strike them. They have but one fault, which arises from their voracity—they are dreadful thieves, and devour everything they can steal. The Arabs, knowing this, always look out when they are counting their money, otherwise the ostriches might snatch some of the coin.

In all ages the feathers of the ostrich have been the object of considerable trade : the birds are hunted, and reared in a domestic state, not so much for their flesh, grease, or eggs, as for their plumes. Each bird produces about half a pound of white feathers, and three pounds of black. These delicate, wavy, and flexible ornaments,

so sought after by the fair sex, are found on the ostrich's tail and wings. The plumes of the male bird are more highly valued than those of the female. The shells of ostrich eggs, which are very hard, are also utilised ; they are made into beautiful cups, which much resemble vases of ivory.

LOUIS FIGUIER (adapted).

<i>diffused'</i>	<i>vehicle</i>	<i>antiquity</i>
<i>animat'd</i>	<i>progeny</i>	<i>legislator</i>
<i>stratagem</i>	<i>diameter</i>	<i>luxurious</i>
<i>harassed</i>	<i>unmolested</i>	<i>voracious</i>
<i>accusations</i>	<i>domesticity</i>	<i>voracity</i>
<i>deficiency</i>	<i>domesticated</i>	<i>captivity</i>

spärse-ly, in a scattered fashion, thinly. Lat. *sparsus*, "scattered."

cu'-lin-ar-y (*kyu'-*), belonging to the kitchen, or to cookery. Lat. *culina*, "kitchen."

Heliogàbalus, Roman emperor, A.D. 218—222 ; an extravagant and dissipated youth ; slain by the soldiers at the age of 18.

rheum-àt-ic (*rüm-*), pertaining to, or of the nature of, rheumatism—a disease of the muscles and joints, swelling or stiffening them.

cal-lös-i-ties, hardened, thickened parts of the skin. Lat. *callum*, "hard skin."

in-ed-i-ble, uneatable. Lat. *in*, "not," and *edo*, "I eat." *moll-uscs*, soft-bodied animals, like snails, &c. Lat. *mollis*, "soft."

ar-id, dry, parched. Lat. *aridus*, from *areo*, "I am dry."

im-pèt-u-ous-ly, with great force, or *impetus*. Lat. *im* (*in*), "in, into," and *peto*, "I seek, or make for."

Describe different methods of hunting the Ostrich.



THE SANDS O' DEE.

“O MARY, go and call the cattle home,
And call the cattle home,
And call the cattle home,
Across the sands o' Dee !”

The western wind was wild and dank with foam,
And all alone went she.

The creeping tide came up along the sand,
And o'er and o'er the sand,
And round and round the sand,
As far as eye could see ;

The blinding mist came down and hid the land—
And never home came she.

Oh, is it weed, or fish, or floating hair?—
A tress o' golden hair,
O' drowned maiden's hair,
Above the nets at sea.

Was never salmon yet that shone so fair
Among the stakes on Dee.

They row'd her in across the rolling foam,
The cruel crawling foam,
The cruel hungry foam,
To her grave beside the sea :
But still the boatmen hear her call the cattle home,
Across the sands o' Dee.

CHARLES KINGSLEY.

THE CAMEL.

1. THE CAMEL AND HIS HOME.

THE Camel and the Dromedary are not two distinct kinds, but only varieties of the same animal. The principal, and perhaps the only sensible, difference by which those two races are distinguished consists in this, that the camel has two hunches upon his back, whereas the dromedary has but one; the latter also is neither so

large nor so strong as the camel. The mixed breed formed between them is considered the best, the most patient, and the most indefatigable of all the kind.

Of the two varieties, the dromedary is by far the most numerous, the camel being scarcely found except in Turkey and the countries of the Levant; while the other is found spread over all the deserts of Arabia, the southern parts of Africa, Persia, Tartary, and a great part of the eastern Indies. Thus, the one inhabits an immense tract of country, the other, in comparison, is confined to a province; the one inhabits the sultry countries of the torrid zone, the other delights in a warm, but not a burning climate; neither, however, can subsist, or propagate, in the variable climates toward the north; they seem formed for those countries where shrubs are plenty and water scarce; where they can travel along the sandy desert without being impeded by rivers, and find food at expected distances; such a country is Arabia, and this, of all others, seems the most adapted to the support and production of this animal.

The height of the camel is, in general, about six feet, and the body is covered with dusky or ash-coloured hair. It has a short head, small ears, and a long bending neck, and is rendered remarkable not only by the humps on its back, but by large callosities at the bottom of the breast, on the knees, and on the inside of the leg. The feet are flat and tough, divided above, but not quite through; a formation that enables the animal to traverse the deserts without being subject to chaps in the hoof.

The camel is the most temperate of animals, and it

can continue to travel several days without drinking. In those vast deserts, where the earth is everywhere dry and sandy, where there are neither birds nor beasts, neither insects nor vegetables, where nothing is to be seen but hills of sand and heaps of stone—there the camel travels, posting forward without requiring either drink or pasture, and is often found six or seven days without any sustenance whatsoever. Its feet are formed for travelling upon sand, and utterly unfit for moist or marshy places; the inhabitants, therefore, find a most useful assistant in this animal, where no other could subsist, and by its means cross those deserts with safety which would be unpassable by any other method of conveyance. An animal thus formed for a sandy and desert region cannot be propagated in one of a different nature. Many vain efforts have been tried to propagate the camel in Spain—they have been transported to America, but have multiplied in neither. It is true, indeed, that they may be brought into these countries, and may perhaps be found to produce there; but the care of keeping them is so great, and the accidents to which they are exposed from the changeableness of the climate are so many, that they cannot answer the care of keeping. In a few years also they are seen to degenerate; their strength and their patience forsake them; and instead of making the riches, they become the burden, of their keepers.

But it is very different in Arabia and those countries where the camel is turned to useful purposes. It is there considered as a sacred animal, without whose hel-

the natives could neither subsist, traffic, or travel; its milk forms a part of their nourishment; they feed upon its flesh, particularly when young; they clothe themselves with its hair, which it is seen to moult regularly once a year; and if they fear an invading enemy, their camels serve them in flight, and in a single day they are known to travel above a hundred miles. Thus, by means of the camel, an Arabian finds safety in his deserts; all the armies upon earth might be lost in the pursuit of a flying squadron of this country, mounted upon their camels, and taking refuge in solitudes where nothing interposes to stop their flight or to force them to wait the invader. Nothing can be more dreary than the aspect of these sandy plains, that seem entirely forsaken of life and vegetation; wherever the eye turns, nothing is presented but a sterile and dusty soil, sometimes torn up by the winds, and moving in great waves along, which, when viewed from an eminence, resemble less the earth than the ocean; here and there a few shrubs appear, that only teach us to wish for the grove—that remind us of the shade of these sultry climates without affording its refreshment; the return of morning, which in other places carries an idea of cheerfulness, here serves only to enlighten the endless and dreary waste, and to present the traveller with an unfinished prospect of his forlorn situation: yet in this chasm of nature, by help of the camel, the Arabian finds safety and subsistence. There are here and there found spots of verdure, which, though remote from each other, are, in a manner, approximated by the labour and industry

of the camel. Thus these districts, which present the stranger with nothing but objects of danger and sterility, afford the inhabitants protection, food, and liberty. The Arabian lives independent and tranquil in the midst of his solitudes; and, instead of considering the vast solitudes spread round him as a restraint upon his happiness, he is, by experience, taught to regard them as the ramparts of his freedom.

GOLDSMITH.

<i>dròm-ed-ar-y</i>	<i>sùs-ten-ance</i>	<i>ìndustry</i>
<i>prò-pag-ate</i>	<i>im-péd-ed</i>	<i>trànguil</i>
<i>chánge-a-ble-ness</i>	<i>sòl-i-tudes</i>	<i>restraint'</i>

in-dè-fát-ig-a-ble, that cannot be tired out, unwearying. Lat. *in*, "not," *de*, "down," and *fatigo*, "I weary."

sùl-try, sweltry, sweltering; very hot and close.

un-pàss-a-ble. Give the common form.

neither subsist, . . . or. Is "neither" usually followed

in this way by "or"? Observe that *three* actions are excluded by "neither . . . or."

ap-pròx-im-àt-ed, brought near to each other. Lat. *ap* (*ad*), "to," and *proximus*, "nearest."

ster-il-i-ty, barrenness, unproductiveness. Lat. *sterilis*, "barren, bare, unfruitful."

Describe the home of the Camel.

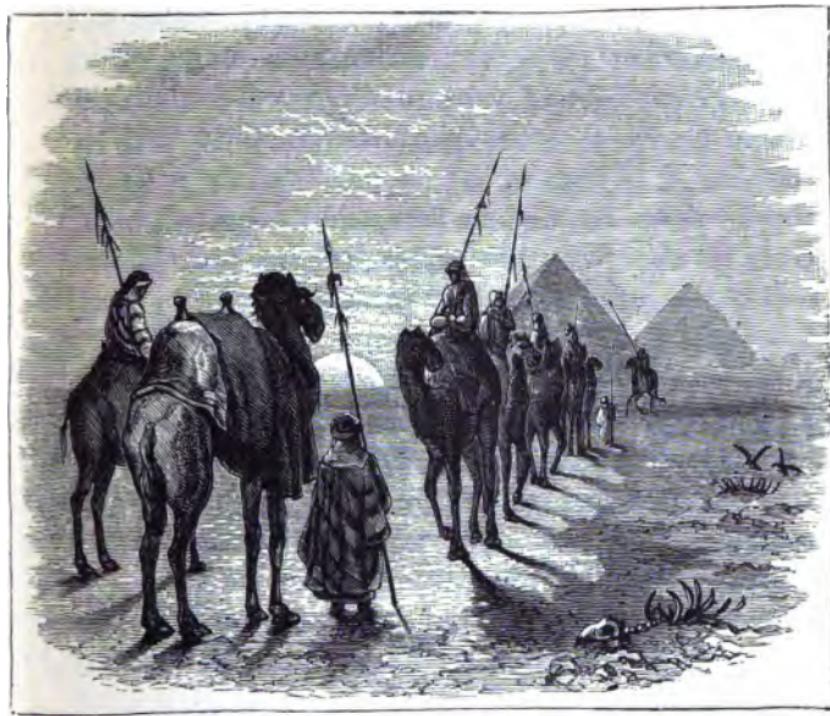
2. THE USEFULNESS OF THE CAMEL.

THE camel is easily instructed in the methods of taking up and supporting his burden; their legs, a few days after they are produced, are bent under their belly; they

are in this manner loaded, and taught to rise ; their burden is every day thus increased, by insensible degrees, till the animal is capable of supporting a weight adequate to its force ; the same care is taken in making them patient of hunger and thirst ; while other animals receive their food at stated times, the camel is restrained for days together, and these intervals of famine are increased in proportion as the animal seems capable of sustaining them. By this method of education they live five or six days without food or water ; and their stomach is formed most admirably by nature to fit them for long abstinence ; besides the four stomachs which all animals have that chew the cud (and the camel is of the number), it has a fifth stomach, which serves as a reservoir, to hold a greater quantity of water than the animal has an immediate occasion for. It is of a sufficient capacity to contain a large quantity of water, where the fluid remains without corrupting, or without being adulterated by the other aliments : when the camel finds itself pressed with thirst, it has here an easy resource for quenching it ; it throws up a quantity of this water, by a simple contraction of the muscles, into the other stomachs, and this serves to macerate its dry and simple food ; in this manner, as it drinks but seldom, it takes in a large quantity at a time, and travellers, when straitened for water, have been often known to kill their camels for that which they expected to find within them.

In Turkey, Persia, Arabia, Barbary, and Egypt, their whole commerce is carried on by means of camels ; and no carriage is more speedy, and none less expensive, ir-

these countries. Merchants and travellers unite themselves into a body, furnished with camels, to secure themselves from the insults of the robbers that infest the countries in which they live. This assemblage is called a *caravan*, in which the numbers are sometimes



known to amount to above ten thousand, and the number of camels is often greater than those of the men: each of these animals is loaded according to his strength, and he is so sensible of it himself, that, when his burden is too great, he remains still upon his belly, the posture in

which he is laden, refusing to rise till his burden be lessened or taken away. In general, the large camels are capable of carrying a thousand weight and sometimes twelve hundred ; the dromedary, from six to seven. In these trading journeys they travel but slowly, their stages are generally regulated, and they seldom go above thirty, or at most about five-and-thirty, miles a day. Every evening when they arrive at a stage, which is usually some spot of verdure where water and shrubs are in plenty, they are permitted to feed at liberty ; they are then seen to eat as much in an hour as will supply them for twenty-four ; they seem to prefer the coarsest weeds to the softest pasture ; the thistle, the nettle, the cassia, and other prickly vegetables, are their favourite food ; but their drivers take care to supply them with a kind of paste composition, which serves as a more permanent nourishment. As these animals have often gone the same track, they are said to know their way precisely, and to pursue their passage when their guides are utterly astray ; when they come within a few miles of their baiting place, in the evening, they sagaciously scent it at a distance, and, increasing their speed, are often seen to trot with vivacity to their stage.

The patience of this animal is most extraordinary ; and it is probable that its sufferings are great ; for, when it is loaded, it sends forth most lamentable cries, but never offers to resist the tyrant that oppresses it. At the slightest sign, it bends its knees and lies upon its belly, suffering itself to be loaded in this position ; by

this practice, the burden is more easily laid upon it than if lifted up while standing ; at another sign, it rises with its load, and the driver getting upon its back between the panniers, which, like hampers, are placed upon each side, he encourages the camel to proceed, with his voice and with a song. In this manner the creature proceeds contentedly forward with a slow uneasy walk, of about four miles an hour, and, when it comes to its stage, lies down to be unloaded as before.

M. Buffon seems to consider the camel to be the most domesticated of all other creatures, and to have more marks of the tyranny of man imprinted on its form. He is of opinion that this animal is not now to be found in a state of nature ; that the humps on its back, the callosities upon its breast and its legs, and even the great reservoir for water, are all marks of long servitude and domestic constraint. The deformities he supposes to be perpetuated by generation ; and what at first was accident at last becomes nature. However this be, the humps upon the back grow large in proportion as the animal is well fed, and, if examined, they will be found composed of a substance not unlike the udder of a cow.

The camel's milk is abundant and nourishing, and, mixed with water, makes a principal part of the beverage of the Arabians.

This animal alone seems to comprise within itself a variety of qualities, any one of which serves to render other quadrupeds absolutely necessary for the welfare of man ; like the elephant, it is manageable and tame ;

like the horse, it gives the rider security ; it carries greater burdens than the ox or the mule, and its milk is furnished in as great abundance as that of the cow ; the flesh of the young ones is supposed to be as delicate as veal ; and their hair is more beautiful, and more in request than wool.

GOLDSMITH.

<i>in-sèns-i-ble</i>	<i>rèservoir</i>	<i>sagaciously</i>
<i>im-méd-i-ate</i>	<i>lamentable</i>	<i>vivacity</i>
<i>màn-age-a-ble</i>	<i>quadrupeds</i>	<i>perpetuated</i>

abs-tin-ence, refraining from food, drink, or other enjoyment or necessary ; fasting. Lat. *abs*, "away, from," and *teneo*, "I hold."

ad-ül-ter-ät-ed, spoiled, changed for the worse ; (by contact with something that ought to be kept apart).

al-i-ments, foods. Lat. *alo*, "I feed, nourish."

mà-cer-ate, soften by steeping.

their whole commerce. Whose ? Would it be sufficient to say "the whole commerce ?" those of the men. Is "those" right ? Express the meaning in other (and better) forms. so sensible of it. Of what ? of all other creatures. Omit "other" ; or say, "more domesticated than all other creatures," or (better) "than any other creature."

Break up the first paragraph into shorter sentences, and improve the connecting expressions.

3. A BAD CHARACTER.

I HAVE, while in England, heard and read more than once of the "docile camel." If "docile" means stupid, well and good ; in such a case the camel is the very

model of docility. But if the epithet is intended to designate an animal that takes an interest in its rider so far as a beast can, that in some way understands his intentions or shares them in a subordinate fashion, that obeys from a sort of submissive or half fellow-feeling with his master, like the horse and elephant, then I say that the camel is by no means docile, very much the contrary ; he takes no heed of his rider, pays no attention whether he be on his back or not, walks straight on when once set a-going, merely because he is too stupid to turn aside ; and then, should some tempting thorn or green branch allure him out of the path, continues to walk on in this new direction simply because he is too dull to turn back into the right road. His only care is to cross as much pasture as he conveniently can while pacing mechanically onwards ; and, for effecting this, his long flexible neck sets him at great advantage, and a hard blow or a downright kick alone has any influence on him, whether to direct or impel. He will never attempt to throw you off his back, such a trick being far beyond his limited comprehension ; but if you fall off, he will never dream of stopping for you, and walks on just the same, grazing while he goes, without knowing or caring an atom what has become of you. If turned loose, it is a thousand to one that he will never find his way back to his accustomed home or pasture, and the first comer who picks him up will have no particular shyness to get over ; Jack or Tom are all the same to him, and the loss of his old master and of his former cameline companions gives him no regret, and occasions

no endeavour to find them again. One only symptom will he give that he is aware of his rider, and that is when the latter is about to mount him, for on such an occasion, instead of addressing him in the style of old Balaam's more intelligent beast, "Am not I thy camel, upon which thou hast ridden ever since I was thine unto this day?" he will bend back his long snaky neck towards his master, open his enormous jaws to bite if he dared, and roar out a tremendous sort of groan, as if to complain of some entirely new and unparalleled injustice about to be done him. In a word, he is from first to last an undomesticated and savage animal, rendered serviceable by stupidity alone, without much skill on his master's part or any co-operation on his own, save that of an extreme passiveness. Neither attachment nor even habit impress him; never tame, though not wide-awake enough to be exactly wild.

One passion alone he possesses, namely revenge, of which he furnishes many a hideous example, while in carrying it out he shows an unexpected degree of far-thoughted malice, united meanwhile with all the cold stupidity of his usual character. One instance of this I well remember; it occurred hard by a small town in the plain of Ba'albec, where I was at the time residing. A lad of about fourteen had conducted a large camel laden with wood, from that very village to another at half an hour's distance or so. As the animal loitered or turned out of the way, its conductor struck it repeatedly, and harder than it seems to have thought he had a right to do. But not finding the occasion favourable for taking

immediate quits, it “bode its time ;” nor was that time long in coming. A few days later, the same lad had to reconduct the beast, but unladen, to his own village. When they were about half-way on the road, and at some distance from any habitation, the camel suddenly stopped, looked deliberately round in every direction to assure itself that no one was within sight, and, finding the road far and near clear of passers-by, made a step forward, seized the unlucky boy’s head in its monstrous mouth, and lifting him up in the air flung him down again on the earth with the upper part of his skull completely torn off, and his brains scattered on the ground. Having thus satisfied its revenge, the brute quietly resumed its pace towards the village as though nothing were the matter, till some men who had observed the whole, though unfortunately at too great a distance to be able to afford timely help, came up and killed it.

Indeed, so marked is this unamiable propensity that some philosophers have ascribed the revengeful character of the Arabs to the great share which the flesh and milk of the camel have in their sustenance, and which are supposed to communicate to those who partake of them over-largey the moral or immoral qualities of the animal to which they belonged. I do not feel myself capable of pronouncing an opinion on so intricate a question ; but thus much I can say, that the camel and his Bedouin master do afford so many and such obvious points of resemblance that I did not think an Arab of Shomer far in the wrong when I once on a time heard him

say, "God created the Bedouin for the camel, and the camel for the Bedouin." W. G. PALGRAVE.

<i>sér-vice-a-ble</i>	<i>endéavour</i>	<i>docile</i> (<i>dō-</i> or <i>dōs-</i>)
<i>re-peat'-ed-ly</i>	<i>symptom</i>	<i>docility</i>
<i>de-lib-er-ate-ly</i>	<i>submissive</i>	<i>mechanically</i>
<i>re-vènge-fùl</i>	<i>stupidity</i>	<i>unparalleled</i>
<i>at-tâch-ment</i>	<i>intricate</i>	<i>undomesticated</i>
<i>mal-ice</i>	<i>Bedouin</i>	<i>co-operation</i>

ép-i-thet, qualifying name; word expressing a quality or attribute. Grk. *epithetos*, from *epi*, "upon," and *tithémi*, "I place."

sub-ord-in-ate, inferior; lit. ranked under another. Lat. *sub*, "under," and *ordinatum*, "to order, or arrange," from *ordo* (*ordinis*), "order."

pass-ive-ness, inactivity, doing no action of any kind; simply suffering or receiving impressions. Lat. *patior* (*passus*), "to suffer, endure."

un-ám-i-a-ble, not lovely or likeable. Lat. *amo*, "I love."

pro-pèn-s-i-ty, inclination, tendency. Lat. *pro*, "forward," and *pensum*, "to hang."

EXERCISE.—Remark on the plural verbs in these sentences: (1) "Jack or Tom *are* all the same to him;" (2) "Neither attachment *nor* even habit *impress* him."

NOBLE REVENGE.

A YOUNG officer (in what army no matter) had so far forgotten himself, in a moment of irritation, as to strike a private soldier full of personal dignity (as sometimes

happens in all ranks) and distinguished for his courage. The inexorable laws of military discipline forbade to the injured soldier any redress,—he could look for no retaliation by acts. Words only were at his command, and, in a tumult of indignation, as he turned away, the soldier said to his officer that he would “make him repent it!”

This, wearing the shape of a menace, naturally re-kindled the officer’s anger, and intercepted any disposition which might be rising within him toward a sentiment of remorse ; and thus the irritation between the two young men grew hotter than before.

Some weeks after this, a partial action took place with the enemy. Suppose yourself a spectator, and looking down into a valley occupied by the two armies. They are facing each other, you see, in martial array. But it is no more than a skirmish which is going on ; in the course of which, however, an occasion suddenly arises for a desperate service. A redoubt, which has fallen into the enemy’s hands, must be recaptured at any price, and under circumstances of all but hopeless difficulty.

A strong party has volunteered for the service ; there is a cry for somebody to head them ; you see a soldier step out from the ranks to assume this dangerous leadership. The party moves rapidly forward ; in a few minutes it is swallowed up from your eyes in clouds of smoke ; for one half-hour, from behind these clouds you receive hieroglyphic reports of bloody strife—fierce repeating signals, flashes from the guns, rolling

musketry, and exulting hurrahs, advancing or receding, slackening or redoubling.

At length all is over ; the redoubt has been recovered ; that which was lost is found again ; the jewel which had been made captive is ransomed with blood. Crimsoned with glorious gore, the wreck of the conquering party is relieved, and at liberty to return.

From the river you see it ascending. The plume-crested officer in command rushes forward, with his left hand raising his hat in homage to the blackened fragments of what once was a flag, whilst with his right hand he seizes that of the leader, though no more than a private from the ranks.

That perplexes you not ; mystery you see none in *that*. For distinctions of order perish, ranks are confounded ; "high" and "low" are words without a meaning ; and to wreck goes every notion or feeling that divides the noble from the noble, or the brave man from the brave.

But wherefore is it that now, when suddenly they wheel into mutual recognition, suddenly they pause ? This soldier, this officer—who are they ? Oh, reader ! once before they had stood face to face—the soldier that was struck, the officer who struck him ! Once again they are meeting, and the gaze of armies is upon them. If for a moment a doubt divided them, in a moment the doubt has perished. One glance exchanged between them publishes the forgiveness that is sealed for ever.

As one who recovers a brother whom he has accounted

dead, the officer sprang forward, threw his arms around the neck of the soldier, and kissed him, as if he were some martyr glorified by that shadow of death from which he was returning ; whilst, on his part, the soldier, stepping back, and carrying his open hand through the beautiful motions of the military salute to a superior, makes this immortal answer—that answer which shut up for ever the memory of the indignity offered to him, even while for the last time alluding to it: “Sir,” he said, “I told you before that I would make you repent it !”

DE QUINCEY.

<i>pèr-son-al</i>	<i>in-jured</i>	<i>distinguished</i>
<i>dàg-ni-ty</i>	<i>re-dress</i>	<i>indignation</i>
<i>dis-ci-pline</i>	<i>pàr-tial</i>	<i>dèspere</i>
<i>spec-tá-tor</i>	<i>re-kind-led</i>	<i>mystery</i>
<i>crim-soned</i>	<i>con-found'-ed</i>	<i>rè-captured</i>
<i>re-lieved'</i>	<i>vol-un-teered'</i>	<i>distinctions</i>

ir-ri-tá-tion, provocation, vexation, annoyance.

in-ex-or-a-ble, stern, rigid, unbending. Lat. *in*, “not,” *ex*, “out,” and *oro*, “I pray, entreat”; “not to be moved or altered by any entreaty.”

re-tali-á-tion, revenge; doing the like, in return. Lat. *re*, “back, again,” and *talis*, “such, like.”

mèn-ace, threat. French, *ménace*,

Lat. *minacæ*, from *minor*, “I threaten.”

in-ter-cèpt-ed, cut off, stopped.

Lat. *inter*, “between,” and *captum*, “to take.”

senti-i-ment, feeling. Lat. *sentio*, “I feel.”

màr-tial, warlike. Lat. *Mars*, the god of war.

re-doubt', a retired work, within other works, serving for retreat. French, *redoute*, Lat.

reductus, "drawn back, remote," from *re*, "back," and *ductus*, "led, drawn."

hi-er-o-glyph-ic, like, or of the character of, hieroglyphs, or picture-writings. Grk. *hierus*, "sacred," and *glypho*, "I carve, or write."

rān-somed, redeemed, bought back. French, *rāzon*, Lat. *redemptionem*, from Lat. *re (d)*

"back," and *emptum*, "to buy."

mu'tual recognition. Knowing each other again.

mār-tyr, one that bears witness for some cause by his death; one that is put to death for some belief. Grk. *marty(r)s*, "a witness."

in-dig-ni-ty, unworthy treatment; insult.

THE BLIND BOY.

O SAY what is that thing called Light,
Which I must ne'er enjoy ;
What are the blessings of the sight,
O tell your poor blind boy !

You talk of wondrous things you see,
You say the sun shines bright ;
I feel him warm, but how can he
Or make it day or night ?

My day or night myself I make
Whene'er I sleep or play ;
And, could I ever keep awake,
With me 'twere always day.

With heavy sighs I often hear
You mourn my hapless woe ;
But sure with patience I can bear
A loss I ne'er can know.



Then let not what I cannot have
My cheer of mind destroy :
Whilst thus I sing, I am a king,
Although a poor blind boy.

CIBBER.

THE EYE.

IT is one of the prerogatives of man to have eyes. Many living creatures have none. The eyes which others—for example, the star-fishes—have, are mere sensitive points, dimly conscious of light and darkness, but not perceiving colours, or distinguishing forms. The eyes of flies are hard, horny lanterns which cannot be moved about like our restless eyes, but look always in the same direction; whilst spiders, having many more things to look after than one pair of such lanterns will suffice for, have eyes stuck all over their heads, and can watch a trapped gnat with one eye, and peer through a hole in their webs with another. We are much better provided for than any of these creatures, although we have but two small orbs to see with. Think, first, how beautiful the human eye is, excelling in beauty the eye of every creature. The eyes of many of the lower animals are doubtless very beautiful. You must have admired the bold, fierce, bright eye of the eagle, the large gentle brown eye of the ox, the treacherous green eye of the cat, waxing and waning like the moon, as the sun shines upon it or deserts it; the pert eye of the sparrow, the sly eye of the fox, the peering little bead of black enamel in the mouse's head, the gem-like eye which redeems the toad from ugliness; and the intelligent, affectionate expression which looks out from the human-

like eye of the horse and the dog. There are these and the eyes of many other animals full of beauty ; there are none, indeed, which are not beautiful ; but there is a glory which excelleth in the eye of man. We realize this fully only when we gaze into the faces of those we love. It is their eyes we look at when we are near them, and recall when we are far away. The face is a blank without the eye ; and the eye seems to concentrate every feature in itself. It is the eye that smiles, not the lips ; it is the eye that listens, not the ear ; it that frowns, not the brow ; it that mourns, not the voice. Every sense and every faculty seems to flow towards it, and find expression through it, nay, to be lost in it ; for all must at times have felt as if the eye of another was not his, but he ; as if it had not merely a life, but also a personality of its own ; as if it was not only a living thing, but also a thinking being.

But apart from this source of beauty, in which man's eye must excel that of all other creatures, as much as his spirit excels in endowments theirs ; it is in itself, even when life has departed from it, and the soul no longer looks through its window, a beautiful and a very wonderful thing. Its beauty is, perhaps, most apparent in the eye of an infant, which, if you please, we shall suppose not dead, but only asleep with its eyes wide open. How large and round they are ; how pure and pearly the white is, with but one blue vein or two marbling its surface ; how beautiful the rainbow ring, opening its mottled circle wide to the light ! How sharply defined the pupil, so black and yet so clear, that

you look into it as into some deep dark well, and see a little face look back at you, which you forget is your own, whilst you rejoice that the days are not yet come for those infant eyes, when "they that look out of the windows shall be darkened!" And then, the soft pink curtains which we call eyelids, with their long silken fringes of eyelashes, and the unshed tears bathing and brightening all! How exquisite the whole! How precious in the sight of God must those little orbs be, when He has bestowed upon them so much beauty!

But apart altogether from that beauty which delights the painter, the human eye is a wondrous construction. Let us glance for a moment at its wonderfulness. It is essentially a hollow globe, or small spherical chamber. There is no human chamber like it in form, unless we include among human dwelling-places the great hollow balls which surmount the cathedral or Basilica domes of St. Peter and St. Paul. The eye is such a ball: the larger part of it, which we do not see when we look in each other's faces, forms the white of the eye, and consists of a strong, thick, tough membrane, something like parchment, but more pliable. This forms the outer wall, as it were, of the chamber of the eye; it may be compared to the cup of an acorn, or to a still more familiar thing, an egg-cup, or to a round wine-glass with a narrow stem. It is strong, so that it cannot easily be injured; thick, so that light cannot pass through it; and round, so that it can be moved about in every direction, and let us see much better on all sides with a

single pair of eyes than the spider can with its host of them.

In the front of the eye is a clear, transparent window exactly like the glass of a watch. If you look at a face sideways, you see it projecting with a bent surface like a bow-window, and may observe its perfect transparency. The eyelids, which I have formerly spoken of as a curtain, may perhaps be better compared to a pair of outside shutters for this window, which are put up when we go to sleep, and taken down when we awake. But these shutters are not useless or merely ornamental through the day. Every moment they are rising and falling, or, as we say, winking. We do this so unceasingly, that we forget that we do it at all ; but the object of this unconscious winking is a very important one. An outside window soon gets soiled and dirty, and a careful shop-keeper cleans his windows every morning. But our eye-windows must never have so much as a speck or spot upon them, and the winking eyelid is the busy apprentice who, not once a day, but all the day, keeps the living glass clean ; so that, after all, we are little worse off than the fishes, who bathe their eyes and wash their faces every moment.

Behind this ever-clean window, and at some distance from it, hangs that beautiful circular curtain which forms the coloured part of the eye, and in the centre of which is the pupil. It is named the Iris, which is only another name for the Rainbow ; for though we speak of eyes as simply blue, or grey, or black, because they have one prevailing tint, we cannot fail to notice that the

ring of the eye is always variously mottled, and flecked or streaked with colours as the rainbow is. This rainbow-curtain, or iris, answers the same purpose which a Venetian blind does. Like it, it can be opened and closed at intervals, and like it, it never is closed altogether; but it is a far more wonderful piece of mechanism than a Venetian blind, and it opens and closes in a different way.

There is nothing this iris so much resembles, both in shape and in mode of action, as that much-loved flower the daisy. The name signifies literally Day's-eye : the flower which opens its eye to the day, or when the day dawns. Shakespeare, who saw all analogies, referring to the similar action of the marigold, in the morning song in *Cymbeline*, tells how

“ Winking Mary-buds begin
To ope their golden eyes.”

The Ettrick Shepherd embodies the same analogy in an evening song :

When the bleewart bears a pearl,
And the daisy turns a pea,
And the bonnie lucken-gowan
Has fauldit up her e'e.”

The daisy and the iris agree in this, that their opening and closing are determined by their exposure to light or darkness; but they differ in this, that the daisy opens widest when the sun is at its height, and shuts altogether when the sun goes down: whilst the iris opens widest

in utter darkness, and closes so as to make the pupil a mere black point when sunshine falls upon it.

If we wish to observe this in our own eyes, we need only close them for a little while before a looking-glass, so that the dropped eyelids may shut out the day, when, like shy night-birds, the living circles will stretch outwards ; and the pupil of the eye, like a hole which the sun is melting in the ice, will quickly widen into a deep clear pool. If now we open our eyes, we see the rainbow-rings contract as the light falls upon them, and the dark pupil rapidly narrow, like the well-head of a spring almost sealed by the frost. But probably all have seen the movement I am describing, in the eyes of a cat, where the change is more conspicuous than in our own eyes ; and have noticed the broad iris spread out in twilight, till the look, usually so suspicious, softened into a mild glance ; whilst, when Pussy is basking in the sun, as she dearly loves to do, she shows between her frequent winkings only a narrow slit for a pupil, like the chink of a shutter, or the space between the spars of a lattice-blind.

The endless motions of this living curtain, which, like the unresting sea, is ever changing its aspect, have for their object the regulation of the flow of light into the eye. When the permitted number of rays have passed through the guarded entrance, or pupil, they traverse certain crystal-like structures, which are now to be described.

Behind the iris is a lens, as opticians call it, or magnifying-glass. We are most familiar with this

portion of the eye, as it occurs in fishes, looking in the recently-caught creature like a small ball of glass, and changing into what resembles a ball of chalk when the fish is boiled. This lens is inclosed in a transparent covering, which is so united at its edges to the walls of the eye that it stretches like a piece of crystal between them ; and in front of it, filling the space dividing the lens from the watch-glass-like window, is a clear transparent liquid like water, in which the iris floats. The lens is, further, set like the jewel-stone of a ring, in what looks, when seen detached, like a larger sphere of crystal ; but which in reality is a translucent liquid contained in an equally translucent membrane, so that the greater part of the eye is occupied with fluid : and the chamber, after all, which it most resembles, is that of a diving-bell full of water. Lastly, all the black part of the eye has spread over its inside surface, first a fine white membrane, resembling cambric or tissue paper, and behind that a dark curtain ; so that it resembles a room with black cloth hung next to the wall, and a white muslin curtain spread over the cloth. This curtain or Retina, seen alone, is like a flower-cup, such as that of a white lily, and like it ends in a stem, which anatomists name the Optic Nerve : the stem in its turn, after passing through the black curtain, is planted in the brain, and is in living connexion with it.

Altogether, then, our eye is a chamber shaped like a globe, having one large window provided with shutters outside, and with a self-adjusting blind within.

Otherwise it is filled with a glassy liquid, and has two wall-papers, or curtains, one white and the other black.

How small this eye-chamber is, we all know; but it is large enough. A single tent sufficed to lodge Napoleon; and Nelson guided the fleets of England from one little cabin. And so it is with the eye: it is set apart for the reception of one guest, whose name is Light, but also Legion; and as the privileged entrant counsels, the great arms and limbs of the body are set in motion.

Within our eyes, at every instant, a picture of the outer world is painted by the pencil of the Sun on the white curtain at the back of the eye; and, when it has impressed us for a moment, the black curtain absorbs and blots out the picture, and the sun paints a new one, which in its turn is blotted out, and so the process proceeds all the day long. What a strange thing this is! We speak of seeing things held before our eyes, as if the things themselves pressed in upon us, and thrust themselves into the presence of our spirits. But it is not so; you no more, any one of you, see my face at this moment, than you ever saw your own. You have looked betimes into a mirror, and seen a something, beautiful or otherwise, which you have regarded as your face. Yet it was but the reflection from a piece of glass you saw; and whether the glass dealt fairly with you or not, you cannot tell; but this is certain—your own face you never beheld. And as little do you see mine: some hundred portraits of me, no two the same, are at this moment hanging, one on the back wall of each of your eye-chambers. It is these portraits you

see, not me ; and I see none of you, but only certain likenesses, two for each of you, a right eye portrait, and a left eye portrait, both very hasty and withal inaccurate sketches. And so it is with the whole visible world. It is far off from us, when it seems nearest. Darkness abolishes it altogether. The mid-day sun but interprets it ; and we know it not in the original, but only in translation.

Face to face we shall never meet this visible world, or gaze eye to eye upon it. We know only its picture, and cannot tell whether that is faithful or not ; but it cannot be altogether faithless, and we must accept it, as we do the transmitted portraits of relatives we have never seen, or the sculptured heads of men who died ages before us. On those we gaze, not distrusting them, yet not altogether confiding in them ; and we must treat the outward world in the same way.

Such is a very imperfect description of that first great inlet of knowledge, the Eye : to cultivate its powers, so that it shall be the entrance-gate of the largest possible amount of instruction and delight, is one of the great ends of all education. And to encourage us in our work, we have the certainty that the human eye, as it excels that of every other animal in beauty, does so also in power. The eyes of many of the lower animals are in themselves, perhaps, as susceptible of education as our eyes are ; and in certain respects they are more wonderful. A shark can see in the depths of the ocean, where we, even if supplied with air, could not see at

all ; a cat can see better in the dark than we can ; and a hawk can see a great deal farther. But two round bits of glass and a pasteboard tube give us greatly the advantage of the longest-sighted hawk ; we need not envy the cat, for a farthing candle will put its eyes at a discount ; and when we have occasion to invade the domains of the shark, we can carry an artificial daylight with us and see better than he, though aided by the splendid mirrors at the back of his eyes.

The human eye is no doubt remarkable for the slowness with which it acquires its powers ; but then the powers it does acquire far transcend those acquired by the eyes of the lower animals. A kitten, for example, sees in a month as well as it ever does ; and a chicken half out of the shell will catch a fly as deftly as the mother hen can. Look, on the other hand, at a baby. It gazes about it with wondering, uncertain eyes ; stares at a candle, and plainly does not know what to make of it ; and is in a dreamlike though complacent perplexity about all things. Cases, too, have occurred of persons who were born blind acquiring the use of their eyes in mature life, and they have recorded how strange everything seemed, and how long it took them to realize what vision truly was.

The eye, then, was intended by its Maker to be educated, and to be educated *slowly* : but, if educated fully, its powers are almost boundless. It is assuredly then a thing to be profoundly regretted, that not one man in a thousand develops the hidden capacities of his organ of vision, either as regards its utilitarian or its

aesthetic applications. The great majority of mankind do not and cannot see one fraction of what they were intended to see. The proverb that "None are so blind as those that will not see" is as true of physical as of moral vision. By neglect and carelessness we have made ourselves unable to discern hundreds of things which are before us to be seen. Thomas Carlyle has summed this up in the one pregnant sentence, "The eye sees what it brings the power to see." How true this is! The sailor on the look-out can see a ship where the landsman sees nothing; the Esquimaux can discover a white fox amidst the white snow; the American backwoodsman will fire a rifle-ball so as to strike a nut out of the mouth of a squirrel without hurting it; the Red Indian boys hold their hands up as marks to each other, certain that the unerring arrow will be shot between the spread-out fingers; the astronomer can see a star in the sky, where to others the blue expanse is unbroken; the shepherd can distinguish the face of every sheep in the flock; the mosaic worker can detect distinctions of colour, where others see none; and multitudes of additional examples might be given of what education does for the eye.

Now, we may not be called upon to hunt white foxes in the snow; or, like William Tell, to save our own life and our child's by splitting with an arrow an apple on its head; or to identify a stolen sheep by looking in its face, and swearing to its portrait: but we must do every day many things essential to our welfare, which we would do a great deal better if we had an eye as trained

as we readily might have. For example, it is not every man that can hit a nail upon the head, or drive it straight in with the hammer. Very few persons can draw a straight line, or cut a piece of cloth or paper even; still fewer can use a pencil as draughtsmen; and fewer still can paint with colours. Yet assuredly there is not a calling in which an educated eye, nice in distinguishing form, colour, size, distance, and the like, will not be of inestimable service. For although it is not to be denied that some eyes can be educated to a much greater extent than others, that can be no excuse for any one neglecting to educate his eye. The worse it is, the more it needs education; the better it is, the more it will repay it.

DR. GEORGE WILSON

(of Edinburgh).

<i>sèns-i-tive</i>	<i>en-dow'ments</i>	<i>endæmel</i>
<i>af-fèc-tion-ate</i>	<i>sphèr-ic-al</i>	<i>personality</i>
<i>or-na-mènt-al</i>	<i>ca-théd-ral</i>	<i>suspicious</i>
<i>un-céas-ing-ly</i>	<i>ap-prèn-tice</i>	<i>privileged</i>
<i>trans-pár-en-cy</i>	<i>trans-mìtt-ed</i>	<i>identify</i>
<i>draughts'-men (dràfts-)</i>	<i>scùlp-tured</i>	<i>utilitarian</i>
<i>gnat (nàt)</i>		<i>tough (tùf)</i>

prè-ròg-a-tive, an exclusive or special right, or privilege. Lat. *prærogativa*, a preference, or privilege; from *prærogativus*, asked first, or before others, for his opinion or vote. From *præ*, "before," and *rogare*, "to ask."

trèach-er-ous (trètsh-), ready to betray, not to be trusted.

con-cen-trate (còn-, or -cèn-), to bring to one point, to draw together. Lat. *con*, and *centrum*, "the middle point, centre."

èx-qui-site, extremely delicate

or fine, perfect. Lat. *exquisitus*, carefully sought out, excellent; from *ex*, "out," and *quæsitus*, "to seek."

es-sen-ti-al-ly, fundamentally, in its framework (or most simple and quite necessary parts).

Lat. *essentia*, the being of anything, from *esse*, "to be."

Bas-il-ic-a, orig. a *royal* hall, where justice was administered; hence, a public hall (of justice, exchange, or other business). The usual ground plan of these buildings was generally adopted in the early Christian churches, and hence the name is still applied to some churches in Rome and elsewhere. Grk. *basilikē*, "kingly, royal," from *basileus*, "king."

i-ris, the coloured circle surrounding the pupil of the eye. Grk. *iris*, "rainbow." *an-dǎ-lo-gies*, points of resemblance between objects otherwise different.

the Ettrick shepherd. James Hogg (1772-1835), the greatest peasant-poet of Scotland after Burns. Born in the Forest of Ettrick in Selkirkshire, where he began life as a shepherd.

blew-ärt (*blyū-* or *blū-*), a plant, the germander speedwell.

lücken-gow'an, the globe flower. The blossom expands only in bright sunshine; in dull weather it remains closed (*lucken*), in the form of a globe.

faul'd-it (*fäld-it*), folded.

trans-lū-cent, passing rays of light, but not transparent. Lat. *trans*, "through, beyond," and *lucens*, "shining."

rēt-i-na, the innermost coat of the eye, consisting of fine nerves resembling *net-work*. Lat. *rete*, "a net."

an-à-tom-ist, one learned in the minute structure of the body, as learned by dissection. Grk. *ana*, "up," and *temno*, "I cut" (*tomé*, "a cutting").

sus-cēp-ti-ble, able to be taken hold of, capable of taking on or receiving, ready to be impressed. Lat. *sus* (*sub*), "under, or from beneath," and *captum*, "to take."

com-plā-cent, pleased, quite satisfied. Lat. *com*, "together," intensive, and *placens*, "pleasing."

æs-thēt-ic (*æs-*), relating to *aesthetics*, the science of taste, or of the beautiful. Grk. *aisthanomai*, "I perceive": lit., the *perception*, in the facts of nature, of the true rules of art.



SAMSON'S LAMENT.

OH, wherefore was my birth from Heaven foretold
Twice by an Angel, who at last, in sight
Of both my parents, all in flames ascended
From off the altar where an offering burned,
As in a fiery column charioting
His godlike presence, and from some great act
Or benefit revealed to Abraham's race ?
Why was my breeding ordered and prescribed
As of a person separate to God,
Designed for great exploits, if I must die

Betrayed, captive, and both my eyes put out,
Made of my enemies the scorn and gaze,
To grind in brazen fetters under task
With this heaven-gifted strength ? O glorious strength,
Put to the labour of a beast, debased
Lower than bond-slave ! Promise was that I
Should Israel from Philistian yoke deliver !
Ask for this great deliverer now, and find him
Eyeless in Gaza, at the mill with slaves,
Himself in bonds under Philistian yoke.
Yet stay ; let me not rashly call in doubt
Divine prediction. What if all foretold
Had been fulfilled but through mine own default ?
Whom have I to complain of but myself,
Who this high gift of strength committed to me,
In what part lodged, how easily bereft me,
Under the seal of silence could not keep,
But weakly to a woman must reveal it,
O'ercome with importunity and tears ?
O impotence of mind in body strong !
But what is strength without a double share
Of wisdom ? Vast, unwieldy, burdensome,
Proudly secure, yet liable to fall
By weakest subtleties ; not made to rule,
But to subserve where wisdom bears command.
God, when he gave me strength, to show withal
How slight the gift was, hung it in my hair.
But peace ! I must not quarrel with the will
Of highest dispensation, which herein
Haply had ends above my reach to know.

Suffices that to me strength is my bane,
And proves the source of all my miseries—
So many, and so huge, that each apart
Would ask a life to wail. But, chief of all,
O loss of sight, of thee I most complain !
Blind among enemies ! O worse than chains,
Dungeon, or beggary, or decrepit age !
Light, the prime work of God, to me is extinct,
And all her various objects of delight
Annulled, which might in part my grief have eased.
Inferior to the vilest now become
Of man or worm, the vilest here excel me :
They creep, yet see ; I, dark in light, exposed
To daily fraud, contempt, abuse, and wrong,
Within doors, or without, still as a fool,
In power of others, never in my own—
Scarce half I seem to live, dead more than half.
O dark, dark, dark, amid the blaze of noon,
Irrecoverably dark, total eclipse
Without all hope of day !
O first-created beam, and thou great Word,
“ Let there be light, and light was over all,”
Why am I thus bereaved thy prime decree ?
The Sun to me is dark
And silent as the Moon,
When she deserts the night,
Hid in her vacant interlunar cave.
Since light so necessary is to life,
And almost life itself, if it be true
That light is in the soul,

She all in every part, why was the sight
 To such a tender ball as the eye confined,
 So obvious and so easy to be quenched,
 And not, as feeling, through all parts diffused,
 That she might look at will through every pore ?
 Then had I not been thus exiled from light,
 As in the land of darkness, yet in light,
 To live a life half dead, a living death,
 And buried ; but, O yet more miserable !
 Myself my sepulchre, a moving grave ;
 Buried, yet not exempt,
 By privilege of death and burial,
 From worst of other evils, pains, and wrongs ;
 But made hereby obnoxious more
 To all the miseries of life,
 Life in captivity
 Among inhuman foes.

MILTON.

<i>col-umn</i>	<i>chār-i-ot-ing</i>	<i>Philistian</i>
<i>de-signed</i>	<i>cap-ti-v-i-ty</i>	<i>deliverer</i>
<i>be-trayed'</i>	<i>bür-den-some</i>	<i>dùngeon</i>
<i>de-fault'</i>	<i>bèg-gar-y</i>	<i>unwieldy</i>
<i>be-reaved'</i>	<i>sè-pul-chre</i>	<i>dispensátion</i>
<i>ex-empt</i>	<i>priv-i-lege</i>	<i>irrecov'erably</i>

fore-told, &c. See *Judges*, *præ-scribed*, appointed, directed,
 chap. xiii. set down (as in writing)
from some great act. Who beforehand. Lat. *præ*, "be-
 ascended . . . as from fore," and *scribo*, "I write."
 (or after doing) some great *sè-par-ate*, set apart (from the
 act. world).

cap-tived, taken captive. See *Judges*, chap. xvi. 4-21.

de-based, rendered base, brought down to a low condition, degraded. Lat. *de*, "down," and "base" (Fr. *bas*, "low," Lat. *bassus*, "mean").

pre-dic-tion, foretelling, declaring beforehand what is about to happen. Lat. *præ*, "before," and *dictum*, "to say." *what if . . . default?* Fill in the omitted words.

im-por-tun'-i-ty (-tyūn-), urgent and repeated request.

im-pot-ence, weakness; want of power. Lat. *im* (in), "not," and *potis*, "able, capable."

sub-tle-ties (sūtl-), cunning plans, artful ways. Lat. *subtilis*, fine, acute, subtle; lit. "woven fine."

suffices. What is the subject of "suffices"?

d&crèp-it, broken down, worn out, very feeble (through old

age). Lat. *decrepitus*, from *de*, "down," and *crepitum*, "to creak, make noise."

prime, first. Lat. *primus*. See *Genesis*, i. 3.

an-nulled, turned to nothing, quite destroyed. Lat. *an* (*ad*), "to," and *nullum*, "nothing."

ec-lipse, lit. leaving out, or failure; the intercepting of the light of one celestial body by another coming between; darkness. Greek *ekleipsis*, from *ek*, "out," and *leipo*, "I leave."

in-ter-lun-ar, lit. between moons; occupied between her disappearance and re-appearance. Lat. *inter*, "between," and *luna*, "the moon."

*ob-nox-iou*s, liable, subject. Lit. liable to hurt; hence also "offensive, hateful." Lat. *ob*, "before, in the face or way of," and *noxa*, "hurt," from *noceo*, "I hurt."

Write a short "Lament of Samson" in your own words, in prose.



WIND AND WINDS

THE air lying next to a hot surface is heated ; the air touching a cold surface is cooled. Such differences of temperature in the air give rise to the formation of winds.

Hot or warm air is lighter than cold air. Now as you know, heat expands bodies ; and it is this expansion of air, or the separation of its particles further from each other, which makes it less dense or heavy than cold air, where the particles lie more closely together. As a consequence of this difference of density, the light warm air rises, and the heavy cold air sinks. You can easily satisfy yourselves of this by experiment. Take a poker, and heat the end of it in the fire until it is red-hot. Withdraw it, and gently bring some small bits of very light paper or some other light substance a few inches above the heated surface. The bits of paper will be at once carried up into the air. This happens because the air heated by the poker immediately rises, and its place is taken by colder air, which, on getting warmed, likewise ascends. The upward currents of air grow feebler as the iron cools, until, when it is of the same temperature as the air around, they cease.

This is the principle on which our fireplaces are constructed. The fire is not kindled on the hearth, for, in that case, it would not get a large enough draught of

air underneath, and would be apt to go out. It is placed some way above the floor, and a chimney is put over it. As soon as the fire is lighted, the air next it gets warmed, and begins to mount, and the air in the room is drawn in from below to take the place of that which rises. All the air which lies above the burning coal gets warmer and lighter; it therefore flows up the chimney, carrying with it the smoke and gases. You will understand that though a bright blazing fire is a pleasant sight in winter, we do not get all the heat which it gives out. On the contrary, a great deal of the heat goes up the chimney; and, except in so far as it warms the walls, passes away and warms the outer air.

What happens in a small way in our houses takes place on a far grander scale in nature. The sun is the great source of heat which warms and lightens our globe. While the heat of the sun is passing through the air it does very little in the way of warming it. The heat goes through the air, and warms the surface of the earth. You know that in summer the direct rays of the sun are hot enough to burn your face, and yet, if you put even a thin sheet of paper over your head, enough to cut off these rays, the sensation of burning heat at once goes off, although the same air is playing about you all the time.

Both land and water are heated by the sun's rays, and the same change in the air then takes place which we find also at our firesides. The layer of air next the warmed earth becomes itself warmed. As it thereby grows lighter it ascends, and its place is taken by colder

air, which flows in from the neighbourhood to take its place. This flowing in of air is wind.

It is easy for you now and then to watch how wind arises. Suppose, for instance, that during the summer you spend some time at the sea-coast. In the morning and early part of the day a gentle wind will often be noticed, blowing from the land out to sea. As the day advances, and the heat increases, this wind dies away. But after a while, when the day is beginning to sink towards evening, another breeze may be noticed springing up from the opposite quarter, and blowing with a delicious coolness from the sea to the land. These breezes are the result of the unequal heating and cooling of the sea and land.

Let us understand how this takes place. On a hot day you find that stones, soil, or other parts of the land get very warm under the sun's rays; yet, if you bathe in the sea at that time, you feel its waters to be pleasantly cool. This shows that the land becomes more quickly hot than the sea. After such a hot day, you will find that at night the surface of the land becomes much colder than the sea, because it parts with its heat sooner than the sea does. By day the hot land heats the air above it, and makes it lighter, so that it ascends; while the cooler and heavier air lying on the sea flows landward as a cool and refreshing sea-breeze. By night this state of things is just reversed; for then the air which lies on the chilled land, being colder and heavier than that which covers the warmer sea, flows seaward as a cool land-breeze.

In mountainous countries where the higher ground rises far up into the colder layers of the atmosphere, another beautiful illustration of these changes of movement in the air may be watched. During the day the air, warmed on the mountain-sides, ascends, and a breeze blows up the valleys towards the heights. During the night the cold heavy air on the mountains flows down as a cold breeze into the valleys.

Take a school-globe, and notice some of the lines which are drawn round it. Midway between the two poles you will notice a line running round the most projecting part of the globe. This line is called the equator. It divides the globe, as you see, into two halves or hemispheres. Now, over the parts of the earth which this line traverses, and for some way on either side, the sun shines with intense heat all the year round. The air is constantly heated to a high degree, and streams upwards in ascending currents. But just as the hot air along this central belt mounts up into the higher regions of the atmosphere, the cooler air from north and south flows in along the surface to supply its place. This constant streaming of air into the equatorial regions forms what are known as the Trade Winds. The steadiness of these winds, and the way in which they may be counted upon in navigation, led long ago to their being called by their present name.

But another main source of movements in the atmosphere, whether gentle breezes or furious hurricanes, arises from changes in the quantity of water-vapour

present in the air. This vapour being lighter than air, a mixture of vapour and air is lighter than the same quantity of air; and of course the more the amount of vapour increases, the less dense does the mixture become. When, therefore, a large amount of vapour is given off into the air over any part of the earth's surface, the result is to cause the air to ascend in that region and allow air with less vapour to flow in from all sides. If this action goes on very rapidly it gives rise to storms.

SEASONAL OR PERIODIC WINDS.

The larger masses of land in the northern hemisphere interfere a good deal with that regular distribution which, as shown by the southern hemisphere, a broad unbroken expanse of ocean favours. In January, for instance, the high and cold table-lands of Central Asia become the centre of a vast area over which the pressure of the air is high. Consequently from that elevated region the wind issues on all sides. In China and Japan it appears as a north-west wind. In Hindostan it comes from the north-east. In the Mediterranean it blows from the east and south-east. But in July matters are reversed, for then the centre of Asia, heated by the hot summer sun, becomes part of a vast region of low-pressure, which includes the north-eastern half of Africa and the east of Europe. Into that enormous basin the air pours from every side. Along the coasts of Siberia and Scandinavia it comes from the north. From China, round the south of the continent to the

Red Sea, it comes from the Indian Ocean, that is, from south-east, south, or south-west. Across Europe it flows from the westward. Hence, according to the position of any place with reference to the larger masses of sea and land the direction of its winds may be estimated.

On the shores of the Indian Ocean the summer and winter winds are known as Monsoons—an Arabic word signifying any part or season of the year, but now generally applied to all winds which have a markedly seasonal character. Since the air is drawn in towards the heart of Asia in summer and comes out from that centre in winter, the direction of the monsoon at any place depends upon geographical position. In India the winter wind is the N.E. Monsoon, which corresponds to the N.E. Trades of the North Atlantic and North Pacific Oceans; the summer wind is the S.W. Monsoon, which is a complete reversal of the natural course of the Trade wind, owing to the enormous in-draught caused by the low summer pressure over Asia. On the Chinese coast the winter wind is a N.W. Monsoon, and the summer wind a S.E. Monsoon. Similar but not quite so strongly contrasted monsoons occur in North America. In the Southern States, for instance, the winter wind comes from the north-east, the summer wind from the south-west.

LOCAL WINDS.

Many winds, often of a destructive character, occur in different countries or in different districts of the same

country, to which local names are given. When they come from tracts where the pressure is high and the temperature low to where the pressure is lower and the temperature higher, they are felt as cold blasts, whereby the humidity of the air in the low-pressure area is condensed into torrents of rain. When around hot desert regions like those of Africa, Arabia, or the interior of Australia, a low atmospheric pressure occurs, its effect sometimes is to draw in towards it the hot air lying over these burning sands, which, in the countries where it blows, is extremely unhealthy. In Italy it is known as the *Sirocco*—a hot moist wind which raises a haze in the air, and produces a sensation of extreme languor both in man and beast. In Spain, where it receives the name of the *Solano*, it sometimes comes across the narrow part of the Mediterranean laden with fine hot dust from the vast African deserts. In Africa and Arabia it appears as the dreaded *Simoom*—a hot suffocating wind which sometimes rushes across the desert with such violence as to raise clouds of sand, and sweep them in whirling masses for many miles. It thus heaps up vast mounds of sand under which caravans of travellers may be completely buried. One of the armies of Cambyses, 50,000 in number, is said to have been engulfed in the sand, when on its way to attack the oasis and temple of Jupiter Ammon. Again, on the coast of Guinea, during December, January, and February, a hot wind, called the *Harmattan*, blows from the interior out to sea. The north-west provinces of India have likewise their hot-winds, which sometimes

produce violent whirlwinds, sweeping up the dust, and carrying it in tall whirling columns into the upper air, whence it gradually finds its way to the earth again.

PROFESSOR ARCHIBALD GEIKIE.

<i>se-par-a-tion</i>	<i>pārt-i-cles</i>	<i>draught</i> (<i>drāft</i>)
<i>de-lū-cious</i>	<i>cōn-sē-quence</i>	<i>hālves</i> (<i>hāvz</i>)
<i>e-qua-tór-i-al</i>	<i>sāt-is-fy</i>	<i>navigátion</i>
<i>gē-o-grāph-ic-al</i>	<i>sens-á-tion</i>	<i>destrūctive</i>
<i>at-mo-sphèr-ic</i>	<i>mount'-ain-ous</i>	<i>unhēalthy</i>

dēns-i-ty, denseness, closeness of parts, and heaviness. Lat. *densus*, "thick, close, compact."

prin-ci-ple, law, or rule; lit. beginning, cause, or origin. Lat. *principium*, "beginning, first step."

il-lus-trá-tion, example, or case, throwing light upon something else. Lat. *illustro*, "I illustrate, or throw light upon," from *il* (*in*), "in, or upon," and *lustro*, "I make clear," from *lux*, "light."

hē-mi-sphēre, half-sphere, half-globe. Greek *hemi*, "half," and *sphaira*, "a sphere."

sea'-son-al, belonging to particular seasons, coming round regularly with the seasons.

pē-ri-ód-ic, occurring after fixed periods.

ē-lev-āt-ed, raised, high. Lat. *e*, "out," and *levo*, "I raise."

re-vērs-al, a turning back, change in the contrary direction. Lat. *re*, "back," and *versum*, "to turn."

hum-id-i-ty (*hyūm-*), moisture, dampness. Lat. *humidus*, "humid, moist."

con-dēnsed, made more dense.

sūf-foc-ate, stop the breath by squeezing the throat; choke, stifle. Lat. *suffocare*, "to choke," from *suf* (*sub*), "under," and *fau*, "the throat."

en-gūlphed, swallowed up, or overwhelmed, as if thrown into a *gulf*.

PILLARS OF SAND.

BERBER is a large town, and in appearance is similar to the Nile towns of Lower Egypt, consisting of the usual dusty, unpaved streets, and flat-roofed houses of sun-baked bricks. It is the seat of a Governor, or Mudir, and is generally the quarters for about 1,500 troops. We were very kindly received by Halleem Effendi, the ex-Governor, who at once gave us permission to pitch the tents in his garden, close to the Nile, on the southern outskirt of the town. After fifteen days of desert marching, the sight of a well-cultivated garden was an Eden in our eyes. About eight acres of land, on the margin of the river, were thickly planted with lofty date groves, and shady citron and lemon trees, beneath which we revelled in luxury on our Persian rugs, and enjoyed complete rest after the fatigue of our long journey. Countless birds were chirping and singing in the trees above us; innumerable ringdoves were cooing in the shady palms; and the sudden change from the dead sterility of the desert to the scene of verdure and of life, produced an extraordinary effect upon the spirits. What caused this curious transition? Why should this charming oasis, teeming with vegetation and with life, be found in the yellow, sandy desert? . . . Water had worked this change; the spirit of the Nile, more potent than any genii of the Arabian fables, had transformed

the desert into a fruitful garden. Halleem Effendi, the former Governor, had, many years ago, planted this garden, irrigated by numerous water-wheels; and we now enjoyed the fruits, and thanked Heaven for its greatest blessings in that burning land, shade and cool water.

However pleasant, there were drawbacks to our garden of Eden; there was dust in our Paradise; not the dust that we see in Europe upon unwatered roads, that simply fills the eyes, but sudden clouds raised by whirlwinds in the desert which fairly choked the ears and nostrils when thus attacked. June is the season when these phenomena are most prevalent. At that time the rains have commenced in the south, and are extending towards the north; the cold and heavy air of the southern rain-clouds sweeps down upon the overheated atmosphere of the desert, and produces sudden violent squalls and whirlwinds when least expected, as at that time the sky is cloudless.

The effect of these desert whirlwinds is most curious, as their force is sufficient to raise dense columns of sand and dust several thousand feet high; these are not the evanescent creations of a changing wind, but they frequently exist for many hours, and travel forward, or more usually in circles, resembling in the distance solid pillars of sand. The Arab superstition invests these appearances with the supernatural, and the mysterious sand-column of the desert, wandering in its burning solitude, is an evil spirit, a "Gin" ("genii" plural, of the Arabian Nights). I have frequently seen many

such columns at the same time in the boundless desert, all travelling or waltzing in various directions at the wilful choice of each whirlwind: this vagrancy of character is an undoubted proof to the Arab mind of their independent and diabolical origin.

The Abyssinian traveller, Bruce, appears to have entertained a peculiar dread of the dangers of such sand columns, but on this point his fear was exaggerated. Cases may have occurred where caravans have been suffocated by whirlwinds of sand, but these are rare exceptions, and the usual effects of the dust-storm are the unroofing of thatched huts, the destruction of a few date palms, and the disagreeable amount of sand that not only half chokes both man and beast, but buries all objects that may be lying on the ground some inches deep in dust.

SIR S. W. BAKER.

sūp-er-nāt-ūr-al
mys-tér-i-ous
sūf-foc-ăt-ed

un-páved
sūn-báked
gé-ni-ă

fatigue (-tēg)
prē-val-ent
whīrl-winds

rēv-elled, feasted merrily, enjoyed ourselves in unbounded freedom and delight.

in-num'-er-a-ble (-nyūm-), count-less, too many to be numbered or counted.

ster-il-i-ty, barrenness, unfruitfulness.

trans-i-tion, change. Lat. *trans*, “beyond,” and *itum*, “to go.”

o-ā-sis or ó-a-sis, a fertile spot (around springs) in the midst of a desert or barren country.

trans-formed', changed in appearance (or in substance). Lat. *trans*, “across,” and *forma*, “a shape.”

ir-rig-ăt-ed, watered; moistened by water led on to it from a stream or canal.

phe-nō-men-a, appearances;

especially unusual appearances in nature. Greek *phainomai*, "I appear." *ē-van-ēs-cent*, fleeting; appearing for a little and presently vanishing or passing away. *dī-a-bōl-ic-al*, devilish; arising, or such as might arise,

through the agency of the devil. Lat. *diabolus*, "the devil." *ex-āg-ger-āt-ed* (*ex-āj-er-āt-ed*), increased or enlarged (in statement) beyond the fact. Lat. *ex*, "out of," and *agger*, "a heap."

THE SEMOOM OF THE DESERT.

IT was about noon, the noon of a summer solstice in the unclouded Arabian sky over a scorched desert, when abrupt and burning gusts of wind began to blow by fits from the south, while the oppressiveness of the air increased every moment, till my companion and myself mutually asked each other what this could mean, and what was to be its result. We turned to inquire of Salim, but he had already wrapped up his face in his mantle, and, bowed down and crouching on the neck of his camel, replied not a word. His comrades, the two Sherarat Bedouins, had adopted a similar position, and were equally silent. At last, after repeated interrogations, Salim, instead of replying directly to our questioning, pointed to a small black tent, providentially at no great distance in front, and said, "Try to reach *that*; if we can get there, we are saved." He added, "Take care that your camels do not stop and lie down;" and

then, giving his own several vigorous blows, relapsed into muffled silence.

We looked anxiously towards the tent; it was yet a hundred yards off, or more. Meanwhile the gusts grew hotter and more violent, and it was only by repeated



efforts that we could urge our beasts forward. The horizon rapidly darkened to a deep violet hue, and seemed to draw in like a curtain on every side; while at the same time a stifling blast, as though from some enormous oven opening right on our path, blew steadily

under the gloom ; our camels too began, in spite of all we could do, to turn round and round and bend their knees preparing to lie down. The semoom was fairly upon us.

Of course we had followed our Arabs' example by muffling our faces, and now with blows and kicks we forced the staggering animals onwards to the only asylum within reach. So dark was the atmosphere, and so burning the heat, that it seemed that hell had risen from the earth, or descended from above. But we were yet in time, and, at the moment when the worst of the concentrated poison-blast was coming around, we were already prostrate one and all within the tent, with our heads well wrapped up, almost suffocated indeed, but safe ; while our camels lay without like dead, their long necks stretched out on the sand awaiting the passing of the gale.

On our first arrival the tent contained a solitary Bedouin woman, whose husband was away with his camels in the Wadi Sirhan. When she saw five handsome men, like us, rush thus suddenly into her dwelling without a word of leave or salutation, she very properly set up a scream. Salim hastened to reassure her by calling out "friends," and without more words threw himself flat on the ground. All followed his example in silence.

We remained thus for about ten minutes, during which a still heat, like that of red-hot iron, slowly passing over us, was alone to be felt. Then the tent walls began again to flap in the returning gusts, and announced that

the worst of the semoom had gone by. We got up, half dead with exhaustion, and unmuffled our faces. My comrades appeared more like corpses than living men, and so, I suppose, did I. However, I could not forbear, in spite of warnings, to step out and look at the camels ; they were still lying flat, as though they had been shot. The air was yet darkish, but before long it brightened up to its usual dazzling clearness. During the whole time that the semoom lasted, the atmosphere was entirely free from sand or dust ; so that I hardly know how to account for its singular obscurity.

W. G. PALGRAVE.

<i>un-cloud'-ed</i>	<i>ab-rupt</i>	<i>op-press-ive-ness</i>
<i>vìg-or-ous</i>	<i>at-mo-sphere</i>	<i>in-ter-rog-á-tions</i>
<i>un-mùffled</i>	<i>rë-as-sûre</i>	<i>sùf-foc-át-ed</i>
<i>ob-scur'-i-ty</i>	<i>ex-haust'-ion</i>	<i>sul-ütt-á-tion</i>

se-moom', or si-moom'. Lit. *hot, poisonous wind.*

sòl-stice, the time when the sun appears to be at its furthest point north or south of the equator, and seems to *stand still*. Lat. *solstitium*, from *sol*, “the sun,” and *sisto*, “I stop, or (make to) stand.” The summer solstice is at the longest day, the winter solstice at the shortest day.

mutually asked each other. Redundant expression.

pro-vid-én-tial-ly (-*shal*), by the help of Providence, thanks to Providence ; as if special arrangements for our safety had been made beforehand. Lat. *pro*, “before,” and *video*, “I see.”

rë-lapsed, fell or滑ed back. Lat. *re*, “back,” and *labor* (*lapsus*), “to glide, or slip.” *a-sýl-um*, place of refuge. Grk. *a*, “not,” and *sylao*, “I rob, or spoil.”

MAY FLOWERS

IN FIELD AND GARDEN.

OH come ! and, while the rosy-footed May
Steals blushing on, together let us tread
The morning dews, and gather in their prime
Fresh-blooming flowers. . . .

See, where the winding vale its lavish stores,
Irriguoous, spreads. See how the lily drinks
The latent rill, scarce oozing through the grass,
Of growth luxuriant ; or the humid bank,
In fair profusion, decks. Long let us walk
Where the breeze blows from yon extended field
Of blossomed beans. Arabia cannot boast
A fuller gale of joy than, liberal, thence
Breathes through the sense, and takes the ravished soul.
Nor is the mead unworthy of thy foot,
Full of fresh verdure, and unnumbered flowers,
The negligence of Nature, wide and wild ;
Where, undisguised by mimic art, she spreads
Unbounded beauty to the roving eye.
Here their delicious task the fervent bees,
In swarming millions, tend : around, athwart,
Through the soft air the busy nations fly,
Cling to the bud, and with inserted tube

Suck its pure essence, its ethereal soul ;
And oft, with bolder wing, they soaring dare
The purple heath, or where the wild-thyme grows,
And' yellow load them with the luscious spoil.

At length the finished garden to the view
Its vistas opens, and its alleys green.
Snatched through the verdant maze, the hurried eye
Distracted wanders : now the bowery walk
Of covert close, where scarce a speck of day
Falls on the lengthened gloom, protracted sweeps ;
Now meets the bending sky, the river now
Dimpling along, the breezy-ruffled lake,
The forest darkening round, the glittering spire,
The ethereal mountain, and the distant main.
But why so far excursive ? when at hand,
Along these blushing borders, bright with dew,
And in yon mingled wilderness of flowers,
Fair-handed Spring unbosoms every grace :
Throws out the snowdrop and the crocus first ;
The daisy, primrose, violet darkly blue,
And polyanthus of unnumbered dyes ;
The yellow wallflower, stained with iron-brown ;
And lavish stock that scents the garden round ;
From the soft wing of vernal breezes shed,
Anemones ; auriculas, enriched
With shining meal o'er all their velvet leaves ;
And full ranunculus, of glowing red.
Then comes the tulip-race, where beauty plays
Her idle freaks : from family diffused

To family, as flies the father-dust,
 The varied colours run ; and, while they break
 On the charmed eye, the exulting florist marks,
 With secret pride, the wonders of his hand.
 No gradual bloom is wanting ; from the bud,
 First-born of Spring, to Summer's musky tribes :
 Nor hyacinths, of purest virgin-white,
 Low-bent, and blushing inward ; nor jonquils,
 Of potent fragrance ; nor narcissus fair,
 As o'er the fabled fountain hanging still ;
 Nor broad carnations ; nor gay-spotted pinks ;
 Nor, showered from every bush, the damask-rose.
 Infinite numbers, delicacies, smells,
 With hues on hues expression cannot paint,
 The breath of Nature, and her endless bloom.

THOMSON.

<i>un-dis-guised</i>	<i>athwart'</i>	<i>thyme (tim)</i>
<i>in-sèrt-ed</i>	<i>ethéreal</i>	<i>polyanthus</i>
<i>dis-tract-ed</i>	<i>dàmppling</i>	<i>anèmonè</i>
<i>lèngth-enèd</i>	<i>narcissus</i>	<i>auricula</i>
<i>ex-cùr-sive</i>	<i>carnátions</i>	<i>ranunculus</i>
<i>em-bos'-oms</i>	<i>délicacìes</i>	<i>hyacinth</i>

lav-ish, profuse, prodigal ; *nègligence*, carelessness ; flowers
 giving largely, without produced and reared by
 considering how much. nature, without any special
ir-ri-gà-ous, moist, well-watered.

ràv-ished, carried off (with joy) ; *fèrv-ent*, earnest, eager. Lat.
 delighted. Fr. *ravir*, Lat. *ferveo*, "I am hot, I boil."
rapere, "to seize." *lùs-cious*, exceedingly sweet.

vis-ta, a view as through an avenue of trees, or the lines of trees themselves.

pro-tract-ed, lengthened. Lat. *pro*, "forth," and *tractum*, "to draw."

fabled fountain. The story is that Narcissus was a beautiful youth that could not fall in love, but at length beheld his

own image reflected in a fountain, and fell in love with that. Being unable to approach this beloved object, he died of grief, and was changed into the flower that bears his name.

expression cannot paint. Give the meaning in other words.

MONEY.

WHEN exchanges are made by giving one ordinary commodity for another, as a sack of corn for a side of bacon, or a book for a telescope, we are said to barter them. The operation is also called truck (French, *troc*, barter). Among uncivilised races trade is still carried on in this way; a traveller going into the interior of South Africa takes a stock of beads, knives, pieces of iron, looking-glasses, &c., in order that he may always have something which the natives will like to receive in exchange for food or services. People still occasionally barter things in England, or the United States, but this is seldom done, owing to the trouble which it gives.

If, for instance, I want a telescope in exchange for a book, I shall probably have to make many inquiries, and to wait a long time before I meet with a person who has a telescope to spare, and who is also willing to take

my book in exchange. It is very unlikely that he who has a telescope will just happen to want that particular book. A second difficulty is, that the book will probably not be worth just as much as the telescope, and neither more nor less. He who owns a valuable telescope cannot cut it up, and sell a part to one and a part to another ; this would destroy its value.

TWO CHIEF FUNCTIONS OF MONEY.

First, *Money serves as a Medium of Exchange*. With the aid of money all the difficulties of barter disappear ; for *money consists of some commodity which all people in the country are willing to receive in exchange, and which can be divided into quantities of any amount*. Almost any commodity might be used as money in the absence of a better material. In agricultural countries corn was so used in former times. Every farmer had a stock of corn in his own granary, and if he wanted to buy a horse or cart, he took so many sacks of corn to his neighbour's granary in exchange. Now suppose that, with corn as money, a farmer wanted to part with a cart and get a plough instead ; he need not inquire until he finds a person willing to receive a cart, and give a plough in exchange. It is sufficient if he find one farmer who will receive a cart and give corn, and any other farmer who will give a plough and receive corn. No difficulty arises, too, if the cart or plough are not of equal value ; for if the cart be the more valuable, then the farmer finally gets for it the plough together with

enough corn to make up the difference. Money thus acts as a *medium of exchange*; it is a go-between, or third term, and it facilitates exchange by dividing the act of barter into two acts, in this way—



No doubt it turns one act of exchange into two; but the two are far more easy to manage than one, because they need not be made with the same person.

Second, *Money serves as a Measure of Value*. When money is used in exchange, he who receives money is said *to sell goods*, and he who pays money is said *to buy* or *to purchase*. In each case there is an act of exchange, and sales and purchases are not really different in nature from acts of barter, except that one of the commodities given or received is employed for the purpose of arranging the exchange. Thus money may be called *current commodity*, because it is merchandise chosen to *run* about as a medium of exchange. Now, in every purchase or sale there must be some proportion between the quantity of the money, and the quantity of the other commodity. This proportion expresses the value of the one commodity as compared with the other. Value in exchange means nothing but this proportion. Now when money is used, the quantity of money given or received for a certain quantity of goods is called *the price of those goods*, so that the price is the value of goods stated in money. But as money,

when once introduced, is used in almost every act of exchange, a further great advantage arises. We are able to compare the value of any commodity with that of any other commodity. If we know how much copper may be had for so much lead; how much iron for so much steel; and so on with zinc and brass, bricks and timber, and so forth, it would not be possible to compare the value of copper with zinc, or iron with timber. But if we know that for one ounce of gold we can get 950 ounces of tin, 1,700 ounces of copper, 6,400 ounces of lead, and 16,000 ounces of wrought iron, then we learn without any trouble that for 1,700 ounces of copper we can get 16,000 ounces of iron, and so on. Thus gold or any other substance used as money serves as a *common measure of value*; it measures the value of every other commodity, and thus enables us to compare the value of each commodity with that of every other.

This is an immense convenience. It leads every one to think and speak of the values of things in terms of a money known to everybody. All lists of values of goods are given as lists of prices, and everybody understands these prices and can compare the prices in one list with those in another. Money may then be said to have two chief functions. It serves as

- (1) *A medium of exchange.*
- (2) *A common measure of value.*

But it is important to remember that, though money thus acts in a very useful and peculiar way, it never

ceases to be a commodity. Its value is subject to the laws of supply and demand ; that is, if the quantity of money increases, its value is likely to decrease, so that more money is given for the same commodity, and *vice versa*.

WHAT MONEY IS MADE OF.

As already remarked, almost any commodity may be used as money, and in different ages all kinds of things, such as wine, eggs, olive oil, rice, skins, tobacco, shells, nails, have actually been employed in buying and selling. But metals are found to serve much the best for several reasons, and gold and silver are better for the purpose than any of the other metals. The advantages of having gold and silver money are evident. Such metals are *portable*, because they are so valuable that a small weight of metal equals in value a great weight of corn or timber or other goods. Then they are *indestructible*, that is, they do not rot like timber, nor go bad like eggs, nor sour like wine ; thus they can be kept for any length of time without losing their value. Another convenience is, that there is no difference in quality in the metal itself ; pure gold is always the same as pure gold, and though it may be mixed with more or less base metal, yet we can assay or analyse the mixture, and ascertain how much pure metal it contains. The metals are also *divisible* ; they may be cut or coined into pieces, and yet the pieces taken together will be as valuable as before they were cut up. It is a further advantage of gold and silver that they are such beautiful,

brilliant substances, and gold is also so heavy, that it is difficult to make any counterfeit gold or silver; with a little experience and care, every one can tell whether he is getting real money or not, when the money is made of gold or silver. Finally, it is a great convenience that *these metals do not change in value rapidly*. A bad harvest makes corn twice as dear as before, and destructible things, like eggs, skins, &c., are always rising or falling in value. But gold and silver change slowly in value, because they last so long, and thus the new supply got in any one year is very little compared with the whole supply or stock of the metal. Nevertheless, *gold and silver, like all other commodities, are always changing in value more or less quickly*.

Metallic Money. Almost all the common metals—copper, iron, tin, lead, &c.—have been used to make money at one time or other, besides various mixtures, such as brass, pewter, and bronze. But copper, silver, and gold, have been found far more suitable than any of the other metals. Copper, indeed, being comparatively low in value, is wanting in portability. It was formerly the only money of Sweden, and I have seen a piece of old Swedish money consisting of a plate of copper about two feet long and one foot broad. A merchant making payments in such money had to carry his money about in a wheel-barrow. Now we use copper only for coins of small value, and to make the copper harder, it is melted up with tin and converted into bronze.

In the Saxon times English money was made of silver only, but this was inconvenient both for very

large and for very small payments. The best way is to use gold, silver, and bronze money according as each is convenient. *In the English system of money, gold is the standard money and the legal tender*, because no one can be obliged to receive a large sum of money in any other metal. If a person owes a hundred pounds, he cannot get rid of the debt without tendering or offering a hundred pieces of coined gold to his creditor. Silver coin is a legal tender only to the amount of forty shillings—that is, no creditor can be obliged to receive more than forty shillings in a single payment. Similarly, bronze coin is a legal tender only up to the amount of one shilling in all.

What is a Pound Sterling? In England people are continually paying and receiving money in pounds, but few could say exactly what a pound sterling means. No doubt it is represented by a coin called a sovereign, but what is a sovereign? Strictly speaking, *a sovereign is a piece of gold coined, in accordance with an Act of Parliament, at a British mint, still bearing the proper stamp of that mint, and weighing not less than 122½ grains*. On the average the sovereigns issued from the mint ought to weigh 123.274 grains, but it is impossible to make each coin of that exact weight, and if this were done, the coins would soon be lessened in weight by wear. A sovereign is legal tender for a pound as long as it weighs 122½ grains or more, and is not defaced; but, in reality, people are in the habit of paying and receiving sovereigns which are several grains less in weight than the law requires.

Twenty silver shillings are by law to be received as equal in value to a pound. This is necessary, in order that we may be able to pay a fraction of a pound, for a coin made of gold equal to the twentieth part of a pound would easily be lost, worn, or even blown away. But the silver in twenty shillings is not equal in value to the gold in a pound; its value varies with the gold price of silver, and, at present, twenty shillings are only worth about sixteen gold shillings and eightpence, that is, five-sixths of a pound. It is necessary to make the silver coin thus of less value than it is taken for, in order to render it unprofitable to melt the coin. In the same way, the metal in a bronze penny is worth only about the sixth part of a penny, so that people would lose a great deal by melting up or destroying pence.

Paper Currency. Instead of using actual coins of gold, silver, or bronze, it is common to make use of paper notes containing promises to pay money. When the sum of money to be paid is large, a bank note is much more convenient, being of far less weight than the coins, and less likely to be stolen. A five-pound bank note is a promise to pay five pounds to any person who has the note in his possession, and who asks for five pounds in exchange for the note at the office of the bank issuing the note. A *convertible bank note* is one which actually can be thus changed into the coins whenever it is desired, and so long as this is really the case, it is evident that the note is just as valuable as the coins, and is more convenient. The only fear is that, if a banker be allowed to issue these bank notes, he will not

always have coins enough to pay them when presented. Very frequently banks have been obliged to stop payment; that is, to refuse to perform their promises. Nevertheless, when there is no other currency to be had, the bank notes often go on circulating like money. They are then called *inconvertible notes*, and there is said to be a *paper money*. A person is willing to receive paper currency in exchange for goods, if he believes that other people will take it from him again. But such paper currency is very bad, because its value will rise or fall according to the quantity issued, and people who owe money will often be able to pay their debts with less value than they received.

W. STANLEY JEVONS.

<i>ex-chánge</i>	<i>trúveller</i>	<i>uncivilised</i>
<i>tél-e-scope</i>	<i>inquiries</i>	<i>agricùltural</i>
<i>as-cer-tain'</i>	<i>mèrchantise</i>	<i>Pàrliment</i>
<i>gràn-ar-y</i>	<i>advàntage</i>	<i>portability</i>
<i>àv-er-age</i>	<i>metàllic</i>	<i>unpròfitable</i>
<i>cùr-renc-y</i>	<i>sòvereign</i>	<i>inconvertible</i>

com-mòd-i-ty, "any portion of wealth," "anything that is really useful and wanted, so that people will buy or sell it." "Goods," "wares," "merchandise," are other names for "commodities." Lat. *commodus*, "suitable, convenient." *méd-i-um*, a middle thing, go-

between, means. Lat. *me-diùs*, "middle."

fa-cil-it-ates, makes easy (or easier). Lat. *fàcili*s, "easy."

cùr-rent, running, passing from hand to hand. Lat. *curro*, "I run."

pòrt-a-ble, easy to carry, or to take from place to place. Lat. *porto*, "I carry."

in-de-struct-i-ble, not destroyable, not to be (readily) destroyed. Lat. *in*, "not," *de*, "down," and *structum*, "to build, or pile up."

as-say', to try, prove, examine, —to see how far a metal is pure or impure. French, *essayer*, from Lat. *exagium*, "a weighing," from the same root as "examine."

an-a-lyse, to separate a thing into the different parts or elements of which it is made up. Greek *ana*, "up," and *luo*, "I loosen, separate."

di-vis-i-ble, fit to be divided.

coun-ter-feit. forged, made in imitation of the real thing. French, *contre* (Lat. *contra*), "against," and *fait* (Lat. *factum*), "made."

cred-i-tor, one that gives credit, one that trusts another with

money or money's worth. Lat. *credo*, "I trust, or believe in." The opposite is "debtor," one that is in debt to another; Lat. *débitum*, "to owe."

mint, place where money is coined. Lat. *monéta*, "the mint, money."

iss-ued, sent forth. French, *issu*, "sprung, born," from *issir*, "to issue, or come forth;"

from Lat. *ex-ire*, "to go out." *de-face*, to injure or spoil the face, disfigure. Lat. *de*, "down," and *facies*, "the face."

con-vèrt-i-ble, able to be converted, turned, or changed (into coins). Lat. *con*, "together," and *verto*, "I turn."

circ-ül-ate, pass round (as in a circle), pass from hand to hand.

THE GOATSUCKER.

WHEN the sun has sunk in the western woods, no longer agitated by the breeze; when you can only see a straggler or two of the feathered tribe hastening to join its mate, already at its roosting-place; then it is that the goatsucker comes out of the forest, where it

has sat all day long in slumbering ease, unmindful of the gay and busy scenes around it. Its eyes are too delicately formed to bear the light, and thus it is forced to shun the flaming face of day, and wait in patience till night invites him to partake of the pleasures her dusky presence brings.



The harmless, unoffending goatsucker, from the time of Aristotle down to the present day, has been in disgrace with man. Father has handed down to son, and author to author, that this nocturnal thief subsists by milking the flocks. Poor injured little bird of night, how sadly hast thou suffered, and how foul a stain has

inattention to facts put upon thy character! Thou hast never robbed man of any part of his property, nor deprived the kid of a drop of milk.

When the moon shines bright, you may have a fair opportunity of examining the goatsucker. You will see it close by the cows, goats, and sheep, jumping up every now and then, under their bellies. Approach a little nearer,—he is not shy, “he fears no danger, for he knows no sin.” See how the nocturnal flies are tormenting the herd, and with what dexterity he springs up and catches them, as fast as they alight on the belly, legs, and udder of the animals. Observe how quiet they stand, and how sensible they seem of his good offices, for they neither strike at him, nor hit him with their tail, nor tread on him, nor try to drive him away as an uncivil intruder. Were you to dissect him, and inspect his stomach, you would find no milk there. It is full of the flies which have been annoying the herd.

The prettily mottled plumage of the goatsucker, like that of the owl, wants the lustre which is observed in the feathers of the birds of day. This at once marks him as a lover of the pale moon’s nightly beams. There are nine species here, in Demerara. The largest appears nearly the size of the English wood-owl. His cry is so remarkable that, having once heard it, you will never forget it. When night reigns over these immeasurable wilds, whilst lying in your hammock, you will hear this goatsucker lamenting like one in deep distress. A stranger would never conceive it to be the cry of a

bird. He would say it was the departing voice of a midnight-murdered victim, or the last wailing of Niobe for her poor children, before she was turned into stone. Suppose yourself in hopeless sorrow, begin with a high loud note, and pronounce, "Ha, ha, ha, ha, ha, ha, ha," each note lower and lower, till the last is scarcely heard, pausing a moment or two betwixt every note, and you will have some idea of the moaning of the largest goatsucker in Demerara.

Four other species of the goatsucker articulate some words so distinctly, that they have received their names from the sentences they utter, and absolutely bewilder the stranger on his arrival in these parts. The most common one sits down close by your door, and flies and alights three or four yards before you, as you walk along the road, crying, "Who-are-you, who-who-who-are-you?" Another bids you, "Work-away, work-work-work-away." A third cries, mournfully, "Willy-come-go. Willy-Willy-Willy-come-go." And high up in the country, a fourth tells you to "Whip-poor-Will, Whip-whip-whip-poor-Will."

You will never persuade the negro to destroy these birds or get the Indian to let fly his arrow at them. They are birds of omen and reverential dread. Jumbo, the demon of Africa, has them under his command; and they equally obey the Yabahou, or Demerara Indian devil. They are the receptacles for departed souls who come back again to earth, unable to rest for crimes done in their days of nature; or they are expressly sent by Jumbo, or Yabahou, to haunt cruel and

hard-hearted masters, and retaliate injuries received from them. If the largest goatsucker chance to cry near the white man's door, sorrow and grief will soon be inside; and they expect to see the master waste away with a slow consuming sickness. If it be heard close to the Negro's or Indian's hut, from that night misfortune sits brooding over it; and they await the event in terrible suspense.

You will forgive the poor Indian of Guiana for this. He knows no better; he has nobody to teach him.

WATERTON.

pá-tience	un-mínd-füI	àgitate
dis-gráce	tor-mènt-ing	dèlicately
dě-príved	un-cív-il	inatténtion
dis-séct	bë-wild-er	intrúder
ö-men	ex-prèss-ly	absolutely
sus-pènse	mourn'-füI-ly	immèasurable

Aristotle, a Greek philosopher, who lived B.C. 384—322.

noc-tùrn-al, nightly, in or during the night. Lat. *nocturnus*, from *nox* (*noctis*), "night."

Ni-o-bë, according to the ancient fable, a daughter of Tantalus, and wife of a king of Thebes (in Greece). She was very proud of her children, but they all died. Homer says she had six sons and six daughters; while

other writers give different numbers, from four up to twenty.

betwixt every note. This should be "betwixt every two notes," or "after every (or each) note." The form is probably a mixture of these two expressions.

är-tic-üI-ate, to form into distinct sounds, words, &c. Lit. to joint; from Lat. *articulus*, "a joint."

re-ver-èn-tial, expressing reverence, or mingled respect and awe. Lat. *re*, "back, again," and *vereor*, "I fear."

re-cép-ta-cles, places, or vessels, for receiving or containing

anything. Lat. *re*, and *captum*, "to take."

re-täl-i-ate, to return like for like, to do the like to one again. Lat. *re*, and *talis*, "such, of a like kind."

THE WHIP-POOR-WILL.

THE plaint of the wailing Whip-poor-Will,
 Who mourns unseen, and ceaseless sings
 Ever a note of wail and woe,
 Till morning spreads her rosy wings,
 And earth and sky in her glances glow.

J. R. DRAKE.

WHY dost thou come at set of sun,
 Those pensive words to say ?
 Why whip poor Will ?—What has he done ?
 And who is Will, I pray ?

Why come from yon leaf-shaded hill
 A suppliant at my door ?
 Why ask of me to whip poor Will ?
 And is Will really poor ?

If poverty's his crime, let mirth
 From out his heart be driven ;
 That is the deadliest sin on earth,
 And never is forgiven.

Art Will himself?—It must be so—
I learn it from thy moan,
For none can feel another's woe
As deeply as his own.

Yet wherefore strain thy tiny throat,
While other birds repose?—
What means thy melancholy note?—
The mystery disclose.

Still “Whip poor Will!”—Art thou a sprite,
From unknown regions sent,
To wander in the gloom of night,
And ask for punishment?

Is thine a conscience sore beset
With guilt?—or, what is worse,
Hast thou to meet writs, duns, and debt,
No money in thy purse?

If this be thy hard fate indeed,
Ah! well may'st thou repine;
The sympathy I give I need—
The poet's doom is thine!

Art thou a lover, Will?—hast proved
The fairest can deceive?
Thine is the lot of all who've loved
Since Adam wedded Eve.

Hast trusted in a friend, and seen
 No friend was he in need ?
 A common error—men still lean
 Upon as frail a reed.

Hast thou, in seeking wealth or fame,
 A crown of brambles won ?
 O'er all the earth 'tis just the same
 With every mother's son !

Hast found the world a Babel wide,
 Where man to Mammon stoops,
 Where flourish Arrogance and Pride,
 While modest Merit droops ?

What, none of these ?—Then, whence thy pain ?
 To guess it who's the skill ?
 Pray have the kindness to explain
 Why I should whip poor Will ?

Dost merely ask thy just desert ?
 What, not another word ?
 Back to the woods again, unhurt !—
 I will not harm thee, bird,

But use thee kindly,—for my nerves,
 Like thine, have penance done ;
 “ Use every man as he deserves,
 Who shall 'scape whipping ? ”—none !

Farewell, poor Will!—not valueless
 This lesson by thee is given :
 “Keep thine own counsel, and confess
 Thyself alone to Heaven !”

G. P. MORRIS.

cease'-less (sés-)	pòv-er-ty	mèlancholy
pèn-sive	pùn-ish-ment	mystery
dis-close	còn-science	sympathy
un-knówn	rë-píne	valueless

sup-pli-ant, one that asks humbly and earnestly. French, *suppliant*, Lat. *supplicantem*, begging humbly (or on one's knees); from *sup* (*sub*), “under,” and *plico* “I fold or double up.”

writ (*rit*), lit. what is written; here an order, issued under authority of a court of justice, to summon an offender.

ar-rog-ance, conceit, making oneself more important than

is proper. Lat. *ar* (*ad*), “to,” and *rogo*, “I ask”; I ask, or claim, or assume (too much).

pèn-ance, pain, suffering (imposed by way of punishment, or to make amends for faults). Lat. *pæna*, “punishment.”

Use every man, &c. “Use every man after his desert, and who should 'scape whipping ?” Shakespeare, *Hamlet*, Act II., Scene 2.

FLODDEN FIELD.

1. BEFORE THE BATTLE.

NEITHER artifices, working upon the King's superstitious feelings, nor the advice and entreaty of Margaret, his Queen, could deter James IV. of Scotland from his

unhappy expedition. He was so well beloved that he soon assembled a great army, and, placing himself at their head, he entered England near the Castle of Twisell, on the 22nd of August, 1513. He speedily obtained possession of the Border fortresses of Norham, Wark, Etall, Ford, and others of less note, and collected a great spoil. Instead, however, of advancing with his army upon the country of England, which lay defenceless before him, the King is said to have trifled away his time with Lady Heron of Ford, a beautiful woman, who contrived to divert him from the prosecution of his expedition until the approach of an English army.

While James lay thus idle on the frontier, the Earl of Surrey advanced at the head of an army of twenty-six thousand men. The earl was joined by his son Thomas, the lord high admiral, with a large body of soldiers who had been disembarked at Newcastle. As the warlike inhabitants of the northern counties gathered fast to Surrey's standard, so, on the other hand, the Scots began to return home in great numbers, because, though, according to the feudal laws, each man had brought with him provisions for forty days, these being now nearly expended, a scarcity began to be felt in James's host. Others went home to place their booty in safety.

Surrey, feeling himself the stronger party, became desirous to provoke the Scottish King to fight. He therefore sent James a message, defying him to battle. James returned for answer, that to meet the English in battle was so much his wish, that, had the message of the earl found him at Edinburgh, he would have laid

aside all other business to have met him on a pitched field.

But the Scottish nobles entertained a very different opinion from their King. They held a council, at which Lord Patrick Lindsay was made president, or chancellor. He opened the discussion by telling the council a parable of a rich merchant, who would needs go to play at dice with a common hazarder, or sharper, and stake a rose-noble of gold against a crooked halfpenny. "You, my lords," he said, "will be as unwise as the merchant, if you risk your King, whom I compare to a precious rose-noble, against the English general, who is but an old crooked churl, lying in a chariot. Though the English lose the day, they lose nothing but this old churl and a parcel of mechanics; whereas so many of our common people have gone home, that few are left with us but the prime of our nobility." He therefore gave it as his advice, that the King should withdraw from the army, for safety of his person, and that some brave nobleman should be named by the council to command in the action. The council agreed to recommend this plan to the King.

But James, who desired to gain fame by his own military skill and prowess, suddenly broke in on the council, and told them, with much heat, that they should not put such a disgrace upon him. "I will fight with the English," he said, "though you had all sworn the contrary. You may shame yourselves by flight, but you shall not shame me; and as for Lord Patrick Lindsay, who has got the first vote, I vow that, when I return to

Scotland, I will cause him to be hanged over his own gate."

In this rash and precipitate resolution to fight at all risks, the King was much supported by the French ambassador, De la Motte. This was remarked by the Earl of Angus, called Bell-the-Cat, who, though very old, had come out to the field with his sovereign. He charged the Frenchman with being willing to sacrifice the interests of Scotland to those of his own country, which required that the Scots and English should fight at all hazards ; and Angus, like Lord Lindsay, alleged the difference between the parties, the English being many of them men of but mean rank, and the Scottish army being the flower of their nobility and gentry. Incensed at his opposition, James said to him scornfully, " Angus, if you are afraid, you may go home." The earl, on receiving such an insult, left the camp that night ; but his two sons remained, and fell in the fatal battle, with two hundred of the name of Douglas.

While King James was in this stubborn humour, the Earl of Surrey had advanced as far as Wooler, so that only four or five miles divided the armies.

The Scottish army had fixed their camp upon a hill called Flodden, which rises to close in, as it were, the extensive flat called Millfield Plain. This eminence slopes steeply towards the plain, and there is an extended piece of level ground on the top, where the Scots might have drawn up their army, and awaited at great advantage the attack of the English. Surrey liked the idea of venturing an assault on that position so ill, that he

resolved to try whether he could not prevail on the King to abandon it. He sent a herald to invite James to come down from the height, and join battle in the open plain of Millfield below—reminded him of the readiness with which he had accepted his former challenge, and hinted that it was the opinion of the English chivalry assembled for battle, that any delay of the encounter would sound to the King's dishonour. We have seen that James was sufficiently rash and imprudent, but his impetuosity did not reach to the pitch Surrey perhaps expected. He refused to receive the messenger into his presence, and returned for answer to the message that it was not such as it became an earl to send to a king.

Surrey, therefore, distressed for provisions, was obliged to resort to another mode of bringing the Scots to action. He moved northward, sweeping round the hill of Flodden, keeping out of the reach of the Scottish artillery, until, crossing the Till near Twisell castle, he placed himself, with his whole army, betwixt James and his own kingdom. The King suffered him to make this flank movement without interruption, though it must have afforded repeated and advantageous opportunities for attack. But when he saw the English army interposed betwixt him and his dominions, he became alarmed lest he should be cut off from Scotland. In this apprehension he was confirmed by one Giles Musgrave, an Englishman, whose counsel he used upon the occasion, and who assured him, that if he did not descend and fight with the English army, the Earl of

Surrey would enter Scotland, and lay waste the whole country. Stimulated by this apprehension, the King resolved to give signal for the fatal battle.

<i>fortress-es</i>	<i>mechanics</i>	<i>artifices</i>
<i>dē-fence-less</i>	<i>nobility</i>	<i>superstitious</i>
<i>war'-like (wōr-)</i>	<i>scorn'-ful-ly</i>	<i>expedition</i>
<i>prē-sid-ent</i>	<i>assault' (as-sōlt)</i>	<i>provisions</i>
<i>chān-cell-or</i>	<i>in-ter-rūp-tion</i>	<i>sacrifice</i>
<i>pār-a-ble</i>	<i>ad-van-tāge-ous</i>	<i>impetuosity</i>

pro-sec-u-tion (-yū), following out, carrying on. Lat. *pro*, "forward," and *sequor* (*secutus*), "I follow."

frōnt-ier, border; lit. the part of a country that *fronts* another. Fr. *frontière*, from

Lat. *frons* (*frontis*), "front." *dis-em-bārk*, lit. to reverse the action of embarking, or putting on board a bark or ship; to land (from ships). Observe the force of "dis" and "em."

haz-ard-er, one that plays games of hazard, or chance.

rōse-nōble. A noble was a gold coin worth 6s. 8d.

chūrl, low or worthless fellow. Old Engl. *ceorl*, "a countryman"; Icelandic, *karl*, "a man"; Scotch, *carl*, "an (old) man."

in-cēnsed, enraged, angered. Lat. *incensum*, "to burn."

ē-min-ēnce, height, hill. Lat. *e*, "out," and *min*, "to project."

sti-mul-āt-ed, pricked on, urged. Lat. *stimulus*, "a goad."

2. THE BATTLE.

WITH this view the Scots set fire to their huts, and the other refuse and litter of their camp. The smoke spread along the side of the hill, and under its cover the army of King James descended the eminence, which is much less steep on the northern than the southern

side, while the English advanced to meet them, both concealed from each other by the clouds of smoke.

The Scots descended in four strong columns, all marching parallel to each other, having a reserve of the Lothian men commanded by Earl Bothwell. The English were also divided into four bodies, with a reserve of cavalry led by Dacre.



The battle commenced at the hour of four in the afternoon. The first which encountered was the left wing of the Scots, commanded by the Earl of Huntly and Lord Home, which overpowered and threw into disorder the right wing of the English under Sir Edmund Howard. Sir Edmund was beaten down, his standard taken, and he himself in danger of instant death, when he was relieved by the Bastard Heron, who came up at the head of a band of determined outlaws like

himself, and extricated Howard. It is objected to the Lord Home by many Scottish writers, that he ought to have improved his advantage, by hastening to the support of the next division of the Scottish army. It is even pretended, that he replied to those who urged him to go to the assistance of the King, that "the man did well that day who stood and saved himself." But this seems invented, partly to criminate Home, and partly to account for the loss of the battle in some other way than by the superiority of the English. In reality, the English cavalry, under Dacre, which acted as a reserve, appear to have kept the victors in check; while Thomas Howard, the lord high admiral, who commanded the second division of the English, bore down, and routed the Scottish division commanded by Crawford and Montrose, who were both slain. Thus matters went on the Scottish left.

Upon the extreme right of James's army, a division of Highlanders, consisting of the clans of MacKenzie, MacLean, and others, commanded by the Earls of Lennox and Argyle, were so insufferably annoyed by the volleys of the English arrows, that they broke their ranks, and, in despite of the cries, entreaties, and signals of De la Motte, the French ambassador, who endeavoured to stop them, rushed tumultuously down hill, and being attacked at once in flank and rear by Sir Edward Stanley, with the men of Cheshire and Lancashire, were routed with great slaughter.

The only Scottish division which remains to be mentioned was commanded by James in person, and consisted

of the choicest of his nobles and gentry, whose armour was so good that the arrows made but slight impression upon them. They were all on foot—the King himself had parted with his horse. They engaged the Earl of Surrey, who opposed to them the division which he personally commanded. The Scots attacked with the greatest fury, and, for a time, had the better. Surrey's squadrons were disordered, his standard in great danger, Bothwell and the Scottish reserve were advancing, and the English seemed in some risk of losing the battle. But Stanley, who had defeated the Highlanders, came up on one flank of the King's division; the admiral, who had conquered Crawford and Montrose, assailed them on the other. The Scots showed the most undaunted courage. Uniting themselves with the reserve under Bothwell, they formed into a circle with their spears extended on every side, and fought obstinately. Bows being now useless, the English advanced on all sides with their bills, a huge weapon which made ghastly wounds. But they could not force the Scots either to break or retire, although the carnage among them was dreadful. James himself died amid his war-like peers and loyal gentry. He was twice wounded with arrows, and at length despatched with a bill. Night fell without the battle being absolutely decided, for the Scottish centre kept their ground, and Home and Dacre held each other at bay. But during the night, the remainder of the Scottish army drew off in silent despair from the bloody field, on which they left their King, and their choicest nobles and gentlemen.

This great and decisive victory was gained by the Earl of Surrey on 9th September 1513. The victors had about five thousand men slain, the Scots twice that number at least. But the loss lay not so much in the number of the slain, as in their rank and quality. The English lost very few men of distinction. The Scots left on the field the King, two bishops, two mitred abbots, twelve earls, thirteen lords, and five eldest sons of peers. The number of gentlemen slain was beyond calculation;—there is scarcely a family of name in Scottish history who did not lose a relative there.

The Scots were much disposed to dispute the fact, that James IV. had fallen on Flodden Field. But the body which the English affirm to have been that of James was found on the field by Lord Dacre, and carried by him to Berwick, and presented to Surrey. Both of these lords knew James's person too well to be mistaken. The body was also acknowledged by his two favourite attendants, Sir William Scott and Sir John Forman, who wept at beholding it.

The fate of these relics was singular and degrading. They were not committed to the tomb, for the Pope, being at that time in alliance with England against France, had laid James under a sentence of excommunication, so that no priest dared pronounce the funeral service over them. The royal corpse was therefore embalmed, and sent to the monastery of Sheen, in Surrey. It lay there till the Reformation, when the monastery was given to the Duke of Suffolk; and, after that period, the body, which was lapped up in a sheet of lead, was

suffered to toss about the house like a piece of useless lumber. Stow, the historian, saw it flung into a waste room among old pieces of wood, lead, and other rubbish. Some idle workmen, "for their foolish pleasure," says the same writer, "hewed off the head: and one Lancelot Young, master-glazier to Queen Elizabeth, finding a sweet smell come from thence, owing doubtless to the spices used for embalming the body, carried the head home, and kept it for some time; but, in the end, caused the sexton of Saint Michael's, Wood-street, to bury it in the charnel-house."

Such was the end of that King, once so proud and powerful. The fatal battle of Flodden, in which he was slain, and his army destroyed, is justly considered as one of the most calamitous events in Scottish history.

SCOTT.

cāv-al-ry	ex-tric-āt-ed	overpow'ered
en-eoun'-tered	un-daunt'-ed	insufferably
slaugh'-ter (slō-)	dē-cis-ive	tumultuously
cārn-age	dē-grād-ing	obstinately
des-patched	at-tend-ants	acknowledged
mōn-as-ter-y	histōrian	excommunication

crim-in-ate, to charge with crime, accuse. Lat. *crimen*, "an accusation."

mitred, wearing, or entitled to wear, a mitre, or bishop's crown. Lat. and Gr. *mitra*, "head-dress, turban."

em-balm (-bām), to preserve, by anointing with balm and other sweet-smelling drugs.

the Reformation, the great change in religious views in the 16th century.

cal-am-it-ous, disastrous, most unfortunate.



AT NIGHT ON GRASMERE.

WHEN Tita and Bell came down stairs, the boat was not only waiting, but was supplied with all manner of nice cushions, plaids, rugs, and a guitar-case. The women showed a good deal of trepidation in stepping into the frail craft, which lay under the shadow of a small jetty; but once out in the open lake, we found sufficient light around us, and Bell, pulling her grey

and woollen shawl more tightly around her, turned to look at the wonders of Grasmere, which she had not seen for many years. A yellow moon was rising over the dusky heights of Silver Home.

It was a pleasant night. All the hills and woods on the other side of the lake seemed for the most part in a black shadow; but out here the moonlight dwelt calmly on the water, and lit up the wooded island further down, and shone along the level shores. As we went out into the silent plain, the windows of the hotel grew smaller and smaller, until in the distance we could see them but as minute points of orange fire that glittered down on the black surface below. Then, in the perfect stillness of the night—as the measured sound of the rowlocks told of our progress, and the moonlight shone on the gleaming blades of the oars—we were all at once startled by a loud and hissing noise, that caused Tita to utter a slight cry of alarm.

We had run into a great bed of water-weeds, that was all—a tangled mass of water-lily leaves, with millions of straight horsetails rising from the shallow lake. We pushed on. The horsetails went down before the prow of the boat; but all around us the miniature forest remained erect. The moonlight sparkled on the ripples that we sent circling out through those perpendicular lines. And then the Lieutenant called out a note of warning, and Bell plunged her oars in the water just in time, for we had nearly run down two swans that were fast asleep in among the tall weeds.

We forsook this shallower end of the lake, and, with

some more hissing of horsetails, pushed out and into the world of moonlight and still water ; and then, as Tita took the oars, and just dipped them now and again to give us a sense of motion, Bell rested her guitar on her knee, and began to sing to us. What should she sing under the solitude of the hills, when all our laughter of dinner-time was over and we were as silent as the lake itself ? There was not even a breath of wind stirring ; and it was in a very low voice, with something of a tremor in it, that Bell began to accompany the faint touching of the guitar.

“ I’ve heard the lilting at our ewe-milking,”

—she sang, and her voice was so low and tremulous that Tita forgot to dip the oars into the water that she might listen to the girl—

“ Lasses a lilting before the break o’ day,
But now they are moaning on ilka green loaning—
The Flowers o’ the Forest are a’ wede away.”

Had Grasmere ever listened to a more pathetic ballad, or to a tenderer voice ? It was as well, perhaps, that the Lieutenant could not see Bell’s face ; for as she sang the last verse—

“ We hear nae mair lilting at our ewe-milking ;
Women and bairns are heartless and wae ;
Sighing and moaning on ilka green loaning—
The Flowers o’ the Forest are a’ wede away,”

—there was a sort of indistinctness in her voice ; and when the Lieutenant said that it was the finest English

song that he had yet heard, and that the air was so very different from most of the old English tunes, she could not answer him for a minute or two. . . .

Then we pulled away over to the island, and round underneath the shadows of its firs, and back through the clear moonlight to the small jetty of the hotel.

WILLIAM BLACK.

<i>plēas-ant</i>	<i>moon'-light</i>	<i>tangled</i>
<i>mēas-ured</i>	<i>prō-gress</i>	<i>plūnged</i>
<i>shāl-low-er</i>	<i>trep-id-ā-tion</i>	<i>in-dis-tīnct-ness</i>
<i>lieu-tēn-ant (lef-tēn-ant)</i>		

jet-ty, pier ; point or erection, jutting or projecting into the sea (or a river). French *jetée*, "a pier," Lat. *jactus*, "cast, or thrown."

min-i-a-ture, on a very small scale ; originally, applied to pictures.

lit-ing, singing merrily.

a *lit-ing* : *a* is for *in* or *on* ; in full, "engaged or occupied in *lit-ing*."

trēm-til-ous (-yāl-), trembling, shaking, quivering.

ilka, each, every.

loan'-ing, or *loan*, an open uncultivated space, either between fields or beside the house. Here the cows were frequently milked.

wede, weeded.

path-ēt-ic, full of tender feeling. Grk. *pathos*, "feeling, suffering."

wae, woeful, sad.

English song. The Lieutenant mistakes.

SIR RICHARD ARKWRIGHT.

RICHARD ARKWRIGHT was born at Preston in Lancashire, on the 23rd of December, 1732. He was the youngest of a family of thirteen children. His

parents being poor people, he grew up rather than was brought up, and his education was but little attended to.

Beginning life as apprentice to a barber, Richard remained in this occupation till 1760, when he was twenty-eight years old. He then started the business of a hair-merchant at Bolton-le-Moor. In order to the purchase and collection of hair, he travelled far and near throughout the cotton districts, and became familiar with the efforts that were then making for the improvement of the methods of cotton manufacture. He had always displayed a taste for mechanics, and here was a clear invitation to him to apply his mechanical genius in this department of invention.

Calico was then made of linen and cotton; linen being used for the warp, or longitudinal threads, which required to be firm and strong, cotton being used for the weft, or cross threads. By means of the spinning-jenny, a modification of the common wheel, invented in 1767 by James Hargreaves, a Blackburn weaver, some thirty or more threads could be spun at once with no more labour than a single thread had previously demanded. But this thread was not firm and hard enough to serve for the warp, and could be employed only for the weft. Besides, the jenny, like the common wheel, was driven by hand, and this involved constant labour and attention. Arkwright thought over the problem for a long time, and at last supplied a machine, driven by water, and capable of producing a vast number of threads of any degree of fineness and hardness. This great invention was called the Spinning-Frame.

The first suggestion of the idea came to Arkwright, according to his own account, from seeing a red-hot bar of iron elongated by passing between rollers. This, however, is a very long way from the form that the idea finally assumed. Mr. Charles Wyatt of Birmingham had entertained the idea of spinning by means of rollers, and had patented the invention in 1738; but it never succeeded, and Arkwright does not appear to have derived any help from it. Having fully considered his plans, Arkwright sought the assistance of a practical mechanic,—John Kay, a clockmaker at Warrington,—who constructed a model machine according to his directions. The new invention worked satisfactorily; and Arkwright now applied to John Smalley, a Preston publican, for help to develop and perfect his machine. In the days of Arkwright's occupation as barber and dealer in hair, he had made a little money by a special process for dyeing hair, which he had discovered. But all his savings were already spent. Mr. Smalley, fortunately, had full confidence in the project, and after a little time entered into partnership with Arkwright. Fearing the violence of the hand-spinners, who saw in the invention of machinery the ruin of their own business, Arkwright and Smalley removed to Nottingham, as Hargreaves with his spinning-jenny had done before them. Here they expected to be safe from machine-breakers, and to find a ready market for their yarn among the stocking manufacturers. Here, accordingly, they established a small factory for the spinning of hosiery yarns.

In July, 1769, Arkwright secured a patent for his great invention. In his specification, he claimed to have, "by great study and long application, invented a new piece of machinery, never before found out, practised, or used, for the making of weft or yarn from cotton, flax, and wool; which would be of great utility to a great many manufacturers, as well as to his Majesty's subjects in general, by employing a great number of poor people in working the said machinery, and by making the said weft or yarn much superior in quality to any heretofore manufactured or made." In the following year Arkwright and Smalley were joined by Messrs. Need and Strutt, a leading firm of hosiery manufacturers in Nottingham, who had all along taken an intelligent interest in the new machine. In 1771 they resolved to erect a spinning factory at Cromford in Derbyshire, employing the waters of the Derwent to drive their machinery. "This was the first water spinning-mill ever erected, and the parent of that great factory system which has contributed so much to the fame of England in the arts of peace. The fact that the machines were moved by water power led to their being called water frame-spinning machines, and the yarn produced was known as water twist."

"Arkwright's original water frame was constructed to deal with only four threads at a time. It consisted of an upright framing of wood, in the upper rear part of which the bobbins of roving were placed, and led thence to the drawing rollers, which occupied the front. The rollers, which constituted the chief feature of the

machine, were about an inch in diameter, and were arranged in pairs one above the other."

The great invention was by no means immediately profitable. The greediness and shortsightedness of Arkwright's fellow-manufacturers were equal to the ignorance and malice of the handspinners. In Lancashire, they would not buy his yarns, though they admitted them to be superior to all others in the market. Arkwright's best workmen were bribed to leave him, and to bring away with them the secret of the machines. Infringements of his patents followed; and the Lancashire spinners actually formed an association for the defence of all such as Arkwright should proceed against in the courts of law. A mill that he had built at Birkacre was burned down; and the incendiaries were believed to have been instigated by cotton manufacturers of the district. Five years had elapsed from the first patent in 1769, and £12,000 had been expended in buildings and machinery, before the invention brought any profit to Arkwright and his firm.

Meantime Arkwright worked busily at fresh inventions, and in 1775 he took out a patent for a complete system of machines for preparing and spinning yarn. In 1785, however, the fighting in the law courts came to an end, and Arkwright's patent was annulled. The consequence was that any manufacturer might use his machines, and the cotton manufacture extended most rapidly. Arkwright held a strong position, however; for no one was able for some time to produce yarns of a quality that could compete with his.

The general capacity of Arkwright's mind was strikingly manifested in the management of his mills. He had no experience to guide him ; yet he organized his business so thoroughly well that his system of management was adopted everywhere, and even at the present day it has not been to any great extent improved.

Arkwright was a man of remarkable industry. He was extremely careful of his time, and was thus able to do a great many things that most men would not be able to find time to do. He strove hard to make up for the want of a good early education ; and even at the age of fifty he shortened the natural time for sleep in order to give one hour to the study of grammar and another hour to writing and spelling.

In 1786 he was elected High Sheriff of Derby ; and on the occasion of presenting an address to George III., congratulating him on his escape from the attempt made upon his life by Margaret Nicholson, he was knighted by the king. Sir Richard Arkwright died in 1792, in his sixtieth year. "To his heirs he left, besides his mills, a fortune of about £500,000, and to his country a legacy the value of which can never be reckoned."

me-chàn-ics (-kàn-)

me-chàn-ic-al

pārt-ner-ship

màn-age-ment

or-ì-gin-al

còn-sti-tute

strik-ing-ly

ìg-nor-ance

man-ì-fac-tür-er

shòrt-sight-ed-ness

màn-i-fest-ed

con-gràt-ùl-at-ing

longitudinal (*lon-ji-tyúd-in-al*), extending or running lengthwise. L. *longitudo*, "length." *mòd-i-fic-á-tion*, change of form (not necessarily great), variation. Lat. *modus*, "measure, manner," and *facere*, "to make."

ë-long-ăt-ed, lengthened, made longer. Lat. *e*, "out," and *longus*, "long."

pát-ent, lit., open (Lat. *patens*, "lying open"). Hence, an open document (letters *patent*, or *open*) conferring an exclusive right or privilege, granting the sole right to a new invention or discovery for a certain time.

spè-ci-fic-á-tion, a statement of particulars.

in-fringe-ment, breach, violation. Lat. *in*, "into, upon," and *frango*, "I break."

in-cénd-i-ar-ies, fire-raisers, persons that set fire to houses, &c. Lat. *incendo*, "I set on fire, I burn."

in-stig-ăt-ed, urged on, spurred on.

an-nulled, brought to nothing, done away with. Lat. *an*, (*ad*), "to," and *nullum*, "nothing."

or-gan-ized, arranged systematically, into definite parts or divisions working well together.

THE FIDDLER AND THE WOLVES.

THE moon was out, and the stars twinkled merrily overhead, as the spry old man trudged away over the crisp and crackling snow. The path, which was a very narrow one, led, for the greater part of the way, through the dark shadows of a heavy bottom forest, which yet remained as wild as when the Indians roamed it, and was untraversed by a waggon road for many miles.

On he dashed with unrelaxing energy, heedless of the black shadows and hideous night cries in the deep

forest. Wolves were howling around him in every direction, but he paid no attention to sounds that were so common. However, he was soon compelled to give more heed to these animals than was by any means pleasing or expected. He had now made nearly half of his journey, and the light, opening ahead through the trees, showed him "the old clearing," as it is called, through which his path led.

The wolves had been getting excessively noisy for the last mile ; and to the undescribable horror of the old man, he could hear them gathering about him in the crackling bushes on either side, as they ran along to keep pace with his rapid steps. The woods very soon seemed to the old man to be literally alive with them, as they gathered in yelling packs from far and near.

Wolves are cautious about attacking a human being at once, but usually require some little time to work themselves up to the point. That such was the case now, proved most lucky for poor old Dick, who began to realize the horrible danger, as a dark object would brush past his legs every few moments, with a snapping sound like the ring of a steel trap ; while the yells and patter of the gathering wolves increased with terrible rapidity. Dick knew enough of the habits of the animals to be fully aware that to run would insure his instant death. as the cowardly pack would be sure to set upon him in a body on the instant of observing any such indication of fear. His only chance was to keep them at bay by preserving the utmost steadiness until he could reach the open ground before him, when he hoped they might leave

him, as they do not like to attack in the open ground. He remembered, too, that an old hut still stood in the middle of the clearing, and the thought that he might reach that haven gave him some comfort.

The wolves were becoming more audacious every minute, and the poor old soul could see their green eyes glaring fiery death upon him from all the thickets around. They rushed at him more boldly one after another, snapping as they went past in closer and closer proximity to his thin legs—indeed, the frightened fiddler instinctively thrust at them with his fiddle to turn them aside. In doing so the strings were jarred, and the despairing wretch took on some hope to his shivering soul when he observed that the suddenness of the sound caused the wolves to leap aside as if he had shot amongst them. Taking immediate advantage of this lucky diversion in his favour, as he had now reached the edge of the clearing, he made a break for the hut, raking his hand across the fiddle-strings at every jump, until they fairly roared again.

The astonished wolves paused for a moment on the edge of the clearing, their tails between their legs, looking after him; but the sight of his flying form renewed at once their savage instincts, and, with a loud burst of yells, they pursued him at full speed. Alas for the unlucky fiddler, had he been caught now, they would never have paused to listen, had he been an Orpheus in reality.

Luckily the old man reached the hut just as they were at his heels, and slamming the rickety door behind

him, he had time to climb out on to the roof, where he was comparatively out of danger. I say comparatively, for the perch he now occupied was so rickety as to make it anything rather than desirable, except by contrast with the immediate condition from which he had escaped. The wolves were now furious, and, thronging the interior of the hut, leaped up at him with wild yells of gnashing rage. The poor old sinner was horribly frightened, and it required the utmost activity of motion to keep his legs from being snapped by them. Wild with the agonized terror as he was, poor old Dick had managed to cling to his fiddle through it all, and remembering that it had saved him in the woods, he now, with the sheer energy of desperation, drew his bow shrieking across the strings, with a sound that rose high above their deafening yells; while, with his feet kicking out into the air, he endeavoured to avoid their steel-like fangs. An instant silence followed this sudden outburst, and Dick continued to produce such frightful spasms of sound as his hysterical condition conceived.

This outbreak kept the wolves quiet for a moment or two, but old Dick learned to his increased horror that even wolves are too fastidious to stand bad fiddling, for they commenced a renewal of the attack, as soon as the first surprise was over, more furiously than ever. This was too much for the poor fiddler, and most especially when the head of a great wolf was thrust up between the boards of the roof, within a few inches of where he sat. He gave himself now for a gone darkie, and with the horrified exclamation, "Bless God!—who

dar?" he fell to fiddling Yankee Doodle with all his might, unconsciously, as the dying swan is said to sing its own requiem in its dying moments. With the first notes of the air, silence commenced. Orpheus had conquered! the brutes owned the subduing spell, and the terror-stricken fiddler, when he came to himself—astonished at the sudden cessation of hostilities—saw he was surrounded by the most attentive, and certainly appreciative audience he had ever played before—for, the moment there was the slightest cessation of the music, every listener sprang forward to renew the battle, and set Dick's pipe-stem legs to flying about in the air again.

But he had now learned the spell, and so long as he continued to play with tolerable correctness, was comparatively safe. The old fiddler soon forgot his terror now in professional pride, for he was decidedly flattered by such intense appreciation; and entering fully into the spirit of the thing, played with a gusto and effect such as he thought he had never equalled. Even the wedding, with its warm lights, its sweetened whisky, was forgotten for the time in the glow of this new professional triumph.

But all pleasures have their drawbacks on this earth: and, as time progressed, he began, with all his enthusiasm, to feel very natural symptoms of cold, fatigue, and even exhaustion. But it would not do; he could not stop a moment, before they were at him again; and there they persistently sat, that shaggy troop of connoisseurs, fidgeting on their haunches, with lolling tongues and

pricked ears, listening to their compulsory charmer, for several weary hours, until the negroes at the wedding, becoming impatient or alarmed about the old man, came out to look for him, and found him thus perched upon the roof of the tottering hut, sawing away for dear life, while he was ready to drop every instant, from sheer fatigue and the freezing cold.

They rescued the old man from his comfortless position, while the lingering form of his late audience told that they most unwillingly surrendered the fruition of their unwonted feast.

C. W. WEBBER.

<i>twinkled</i>	<i>untraversed</i>	<i>de-sper-á-tion</i>
<i>trudged</i>	<i>unrelaxing</i>	<i>host-úl-i-ties</i>
<i>crackling</i>	<i>literally</i>	<i>ap-pré-ci-átt-ive</i>
<i>hild-e-ous</i>	<i>audacious</i>	<i>pro-fés-sion-al</i>
<i>cau'-tious (kō-shus)</i>	<i>au'dience</i>	<i>per-sist-ent-ly</i>
<i>cow'-ard-ly</i>	<i>gnash-ing</i>	<i>com-pùl-sor-y</i>

hys-tér-ic-al, very excitable, or excited.

di-vér-sion, turning the attention away from the object in view. Lat. *di* (*dis*), asunder, in other directions, and *verto*, "I turn."

Orpheus, a Greek poet and musician, who, according to legend, went down to the abodes of the dead, and charmed the ruler of Hades (the unseen world) to allow

his dead wife Eurydice to return with him to the upper world. (There was a condition, however, that Orpheus should not look back until they were out of the lower world; but he glanced behind him just before they crossed the boundary, and Eurydice was taken back.)

in-stinct-ive-ly, by instinct; without thinking what he was doing.

fas-tid-i-ous, nice, particular, difficult to please.

ré-qui-em, hymn for the repose of one's soul after death. "Requiem" is the first word of a Latin hymn, used by the Roman Catholic Church, for the rest of the souls of the dead. Lat. *requies*, "rest, repose," after suffer-

ing or toil; from *re*, "back, again," and *quies*, "quiet, rest."

cess-á-tion, ceasing, stopping. *en-thú-si-a-sm*, burning zeal, most deep interest.

con-nois-seurs (French), skilled critics, good judges.

frú-i-tion, enjoyment. Lat. *fruor*, "I enjoy."

SAGO AND THE SAGO TREE.

THE great sago district of East Ceram supplies most of the surrounding islands with their daily bread. During our week's delay I had an opportunity of seeing the whole process of making it, and obtaining some interesting statistics. The sago tree is a palm, thicker and larger than the cocoa-nut tree, although rarely so tall, and having immense pinnate spiny leaves, which completely cover the trunk till it is many years old. It has a creeping root-stem like the Nipa palm, and, when about ten or fifteen years of age, sends up an immense terminal spike of flowers, after which the tree dies. It grows in swamps, or in swampy hollows on the rocky slopes of hills, where it seems to thrive equally well as when exposed to the influx of salt or brackish water. The midribs of the immense leaves form one of the most useful articles in these lands, supplying the place of bamboo, to which for many purposes they are

superior. They are twelve or fifteen feet long, and, when very fine, as thick in the lower part as a man's leg. They are very light, consisting entirely of a firm pith covered with a hard thin rind or bark. Entire houses are built of these ; they form admirable roofing-poles for thatch ; split and well supported, they do for flooring ; and when chosen of equal size, and pegged together side by side to fill up the panels of framed wooden houses, they have a very neat appearance, and make better walls and partitions than boards, as they do not shrink, require no paint or varnish, and are not a quarter the expense. When carefully split and shaved smooth, they are formed into light boards with pegs of the bark itself, and are the foundation of the leaf-covered boxes of Goram. All the insect-boxes I used in the Moluccas were thus made at Amboyna, and, when covered with stout paper inside and out, are strong, light, and secure the insect pins remarkably well. The leaflets of the sago, folded and tied side by side on the smaller midribs, form the "atap" or thatch in universal use, while the product of the trunk is the staple food of some hundred thousands of men.

When sago is to be made, a full-grown tree is selected just before it is going to flower. It is cut down close to the ground, the leaves and leaf-stalks cleared away, and a broad strip of the bark taken off the upper side of the trunk. This exposes the pithy matter, which is of a rusty colour near the bottom of the tree, but higher up pure white, about as hard as a dry apple, but with woody fibres running through it

about a quarter of an inch apart. This pith is cut or broken down into a coarse powder by means of a tool constructed for the purpose—a club of hard and heavy wood, having a piece of sharp quartz rock firmly imbedded into its blunt end, and projecting about half an inch. By successive blows of this, narrow strips of the pith are cut away, and fall down into the cylinder formed by the bark. Proceeding steadily on, the whole trunk is cleared out, leaving a skin not more than half an inch in thickness. This material is carried away (in baskets made of the sheathing bases of the leaves) to the nearest water, where a washing-machine is put up, which is composed almost entirely of the sago tree itself.



Sago Club.

The large sheathing bases of the leaves form the troughs, and the fibrous covering from the leaf-stalks of the young cocoa-nut the strainer. Water is poured on the mass of pith, which is kneaded and pressed against the strainer till the starch is all dissolved and has passed through, when the fibrous refuse is thrown away, and a fresh basketful put in its place. The water charged with sago starch passes on to a trough, with a depression in the centre, where the sediment is deposited, the surplus water trickling off by a shallow outlet. When the trough is nearly full, the mass of starch, which has a slight reddish tinge, is made into

cylinders of about thirty pounds' weight, and neatly covered with sago leaves, and in this state is sold as raw sago.

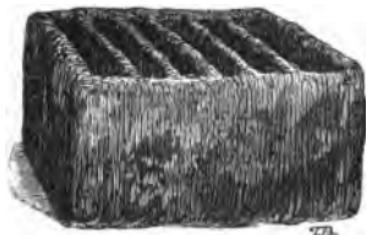
Boiled with water this forms a thick glutinous mass, with a rather astringent taste, and is eaten with salt, limes, and chillies. Sago bread is made in large



Sago Washing.

quantities, by baking it into cakes in a small clay oven containing six or eight slits side by side, each about three-quarters of an inch wide, and six or eight inches square. The raw sago is broken up, dried in the sun, powdered, and finely sifted. The oven is heated over a clear fire of embers, and is lightly filled with the sago powder. The openings are then covered

with a flat piece of sago bark, and in about five minutes the cakes are turned out sufficiently baked. The hot cakes are very nice with butter, and, when made with the addition of a little sugar and grated cocoa-nut, are quite a delicacy. They are soft, and something like corn-flour cakes, but have a slight characteristic flavour, which is lost in the refined sago we use in this country. When not wanted for immediate use, they are dried for several days in the sun, and tied up in bundles of twenty. They will then keep for years ; they are very hard and very rough and dry, but the people are used



Sago Oven.

to them from infancy, and little children may be seen gnawing at them as contentedly as ours with their bread-and-butter. If dipped in water and then toasted, they become almost as good as when fresh baked ; and, thus treated, they were my daily substitute for bread with my coffee. Soaked and boiled they make a very good pudding or vegetable, and served well to economize our rice, which is sometimes difficult to get so far east.

It is truly an extraordinary sight to witness a whole tree-trunk, perhaps twenty feet long and four or five

in circumference, converted into food with so little labour and preparation. A good-sized tree will produce thirty tomans or bundles of thirty pounds each, and each toman will make sixty cakes of three to the pound. Two of these cakes are as much as a man can eat at one meal, and five are considered a full day's allowance ; so that, reckoning a tree to produce 1,800 cakes, weighing 600 pounds, it will supply a man with food for a whole year. The labour to produce this is very moderate. Two men will finish a tree in five days, and two women will bake the whole into cakes in five days more ; but the raw sago will keep very well, and can be baked as wanted, so that we may estimate that in ten days a man may produce food for the whole year. This is on the supposition that he possesses sago trees of his own, for they are now all private property. If he does not, he has to pay about seven-and-sixpence for one ; and, as labour here is fivepence a day, the total cost of a year's food for one man is about twelve shillings. The effect of this cheapness of food is decidedly prejudicial, for the inhabitants of the sago countries are never so well off as those where rice is cultivated. Many of the people here have neither vegetables nor fruit, but live almost entirely on sago and a little fish. Having few occupations at home, they wander about on petty trading or fishing expeditions to the neighbouring islands ; and, as far as the comforts of life are concerned, are much inferior to the wild hill-Dyaks of Borneo, or to many of the more barbarous tribes of the Archipelago.

A. R. WALLACE.

<i>opportunity</i>	<i>surround'ing</i>	<i>dissolved</i>
<i>universal</i>	<i>complètely</i>	<i>glutinous</i>
<i>sufficiently</i>	<i>selected</i>	<i>substitute</i>
<i>delicacy</i>	<i>imbèdded</i>	<i>allow'ance</i>
<i>contentedly</i>	<i>projecting</i>	<i>estimate</i>
<i>vegetable</i>	<i>proceed'ing</i>	<i>decidedly</i>
<i>trough (tròf)</i>	<i>knead (nèd)</i>	<i>sheathing</i>

Ceram, an island, west of New Guinea.

sta-tis-tics, collection of facts regarding the condition or circumstances (Lat. *status*) of any nation, industry, or other interest.

pin-nate, lit. feathered (Lat. *pinna*, "a feather"), shaped like a feather; having leaflets on each side of a central rib.

spin-y, furnished with spines, thorny. Lat. *spina*, "a thorn." *term-in-al*, connected with, or growing at, the end. Lat. *terminus*, "an end."

part-i-tions, divisions, walls between rooms and such-like spaces. Lat. *partio*, "I part, or divide."

Goram, a small island near the east end of Ceram.

Amboyna, a small island south of the west end of Ceram.

fi-brous, composed of fibres, filaments, or thread-like

substances. Lat. *fibra*, "thread."

de-près-sion, the act of pressing down; the state or feeling resulting from being pressed down; here, a hollow place. Lat. *de*, "down," and *pressum*, "to press."

séd-i-ment, what settles down; the solid grains or particles that fall to the bottom (in water or other liquid). Lat. *sedeo*, "I sit, or settle."

sur-plus, or "over-plus," what remains over after a necessary amount has been used or expended. French, *sur* (Lat. *super*), "over," and Lat. *plus*, "more."

cyl-in-ders, bodies shaped like rollers. Greek, *kylindo*, "I roll."

a-strin-gent, binding close, contracting; hence, of taste, bitter, acid. Lat. *a* (*ad*), "to," and *stringo*, "I bind fast."

chil-li, or *chil-ly*, the pod or fruit of Guinea pepper.

ec-d-nom-ize, save, spend sparingly, manage with frugality. Greek *oikos*, "house," and

nomos, "law;" with reference in first instance, to household management.

pre-jū-di-cial, hurtful.

THE LAND OF INDOLENCE.

IN lowly dale, fast by a river's side,
 With woody hill o'er hill encompassed round,
 A most enchanting wizard did abide,
 Than whom a fiend more fell is nowhere found.
 It was, I ween, a lovely spot of ground :
 And there a season atween June and May,
 Half prankt with spring, with summer half imbrowned,
 A listless climate made, where, sooth to say,
 No living wight could work, ne carèd even for play.

Was nought around but images of rest :
 Sleep-soothing groves, and quiet lawns between ;
 And flowery beds that slumberous influence kest,
 From poppies breathed ; and beds of pleasant green,
 Where never yet was creeping creature seen.
 Meantime unnumbered glittering streamlets played,
 And hurled everywhere their waters sheen,
 That, as they bickered through the sunny glade,
 Though restless still themselves, a lulling murmur
 made.

Joined to the prattle of the purling rills,
Were heard the lowing herds along the vale,
And flocks loud-bleating from the distant hills,
And vacant shepherds piping in the dale :
And now and then sweet Philomel would wail,
Or stock-doves plain amid the forest deep,
That drowsy rustled to the sighing gale ;
And still a coil the grasshopper did keep ;
Yet all these sounds yblent inclinèd all to sleep.

Full in the passage of the vale, above,
A sable, silent, solemn forest stood ;
Where nought but shadowy forms was seen to move,
As Idless fancied in her dreaming mood :
And up the hills, on either side, a wood
Of blackening pines, aye waving to and fro,
Sent forth a sleepy horror through the blood ;
And, where this valley winded out, below,
The murmuring main was heard, and scarcely heard,
to flow.

A pleasing land of drowsihead it was,
Of dreams that wave before the half-shut eye ;
And of gay castles in the clouds that pass,
For ever flushing round a summer sky :
There eke the soft delights, that witchingly
Instil a wanton sweetness through the breast,
And the calm pleasures always hovered nigh ;
But whate'er smacked of noyance, or unrest,
Was far far off expelled from this delicious nest

THOMSON.

U

en-com'-passed

slumberous

purling

enchant-ing

influence

wizard

im-browned'

images

wutchingly

than whom. Strict grammar seems to require "who," which, however, is never found in this construction. Compare "I am older than him," or "than he."

fiend (*fēnd*), a malicious enemy; devil. Old English *feond*, "foe, enemy," participle of *feon*, "to hate."

fell, cruel, dreadful.

ween, think. Old Engl. *wenan*, "to expect, think."

prānkt, decked gaily.

wight, creature, person.

ne, nor.

kest, cast.

vāc-ant, thoughtless, empty-

minded. Lat. *vacans*, "vacant, empty."

Philomel, the nightingale. So called from *Philoméla*, daughter of Pandion, King of Athens, who is fabled to have been changed into a nightingale.

coil, disturbance, stir.

y-blēnt, "blended"; old form of past participle.

Idless, idleness.

drows-i-head, drowsiness, sleepiness. The ending "-head" (a modified form of "-hood" as in "child-hood," &c.) was once common in English, although now very rare.

Thomson (1700-1748) wrote *The Castle of Indolence*, from which this extract is taken, in imitation of Spenser (1552-1599). Hence the old forms and quaint style.

HOW THEY WORK IN UTOPIA.

HUSBANDRY is a science common to all the Utopians in general, both men and women, wherein they be expert and cunning. In this they be all instructed from their youth; partly in their schools with traditions and

precepts, and partly in the country nigh the city, brought up as it were in playing, not only beholding the use of it, but by occasion of exercising their bodies, practising it also. Besides husbandry, which (as I said) is common to them all, every one of them learneth one or other several and particular science, as his own proper craft. That is, most commonly, either cloth-working in wool or flax, or masonry, or the smith's craft, or the carpenter's science: for there is none other occupation that any number, to speak of, doth use there.

For their garments, which throughout all the island be of one fashion (saving that there is a difference between the man's garment and the woman's, between the married and the unmarried), and this one continueth for evermore unchanged, seemly and comely to the eye, no let to the moving and wielding of the body, also fit both for winter and summer; as for these garments, I say, every family maketh their own. But of the other foresaid crafts, every man learneth one; and not only the men but also the women. But the women, as the weaker sort, be put to the easier crafts, as to work wool and flax. The more laborious sciences be committed to the men. For the most part every man is brought up in his father's craft: for most commonly they be naturally thereto bent and inclined. But if a man's mind stand to any other, he is by adoption put into a family of that occupation which he doth most fantasy. Whom not only his father, but also the magistrates, do diligently look to, that he be put to a discreet and an

honest householder. Yea, and if any person, when he hath learned one craft, be desirous to learn also another, he is likewise suffered and permitted. When he hath learned both, he occupieth whether he will, unless the city hath more need of the one than of the other. The chief and almost the only office of the Siphogrants is, to see and take heed that no man sit idle, but that every one apply his own craft with earnest diligence. And yet for all that, not to be wearied from early in the morning to late in the evening with continual work, like labouring and toiling beasts. For this is worse than the miserable and wretched condition of bondmen.

Which, nevertheless, is almost everywhere the life of workmen and artificers, saving in Utopia. For they, dividing the day and the night into twenty-four just hours, appoint and assign only six of those hours to work before noon, upon the which they go straight to dinner; and after dinner, when they have rested two hours, then they work three hours, and upon that they go to supper. About eight of the clock in the evening (counting one of the clock at the first hour after noon) they go to bed: eight hours they give to sleep. All the void time that is between the hours of work, sleep, and meat, that they be suffered to bestow every man as he liketh best himself. Not to the intent that they should misspend this time in riot or slothfulness; but being then licensed from the labour of their own occupations to bestow the time well and thriftily upon some other science, as shall please them. For it is a solemn custom there to have lectures daily, early in the morning, where

to be present they only be constrained that be namely chosen and appointed to learning. Howbeit, a great multitude of every sort of people, both men and women, go to hear lectures, some one and some another, as every man's nature is inclined. Yet, this notwithstanding, if any man had rather bestow this time upon his own occupation (as it chanceth in many, whose minds rise not in the contemplation of any science liberal), he is not letted nor prohibited, but is also praised and commended, as profitable to the commonwealth. After supper they bestow one hour in play ; in summer in their gardens, in winter in their common halls, where they dine and sup. There they exercise themselves in music, or else in honest and wholesome communication. Dice-play, and such other foolish and pernicious games, they know not ; but they use two games, not much unlike the chess. The one is the battle of numbers, wherein one number stealeth away another. The other is wherein vices fight with virtues, as it were in battle array, or a set field. In the which game is very properly showed, both the strife and discord that the vices have among themselves, and again, their unity and concord against virtues. And also, what vices be repugnant to what virtues ; with what power and strength they assail them openly ; by what wiles and subtily they assault them secretly ; with what help and aid the virtues resist and overcome the puissance of the vices ; by what craft they frustrate their purposes ; and finally by what sleight or means the one getteth the victory.

But here, lest you be deceived, one thing you must

look more narrowly upon. For seeing they bestow but six hours in work, perchance you may think that the lack of some necessary things hereof may ensue. But this is nothing so; for that small time is not only enough, but also too much for the store and abundance of all things that be requisite, either for the necessity or commodity of life. The which thing you also shall perceive, if you weigh and consider with yourselves how great a part of the people in other countries liveth idle. First, almost all women, which be the half of the whole number: or else, if the women be somewhere occupied, there most commonly in their stead the men be idle. Besides this, how great and how idle a company is there of priests and religious men, as they call them? Put thereto all rich men, specially all landed men, which commonly be called gentlemen and noblemen. Take into this number also their servants: I mean all that flock of stout bragging rush-bucklers. Join to them also sturdy and valiant beggars, cloaking their idle life under the colour of some disease or sickness. And truly you shall find them much fewer than you thought, by whose labour all these things are wrought, that in men's affairs are now daily used and frequented. Now, consider with yourself, of these few that do work, how few be occupied in necessary works. For where money beareth all the swing, there many vain and superfluous occupations must needs be used to serve only for riotous superfluity, and dishonest pleasure; for the same multitude that now is occupied in work, if they were divided into so few occupations as the necessary use of nature requireth,

in so great plenty of things as then of necessity would ensue, doubtless the prices would be too little for the artificers to maintain their livings. But if all these that be now busied about unprofitable occupations, with all the whole flock of them that live idly and slothfully, which consume and waste every one of them more of these things that come by other men's labour than two of the workmen themselves do: if all these, I say, were set to profitable occupations, you easily perceive how little time would be enough, yea, and too much, to store us with all things that may be requisite either for necessity or commodity, yea, or for pleasure, so that the same pleasure be true and natural.

And this in Utopia the thing itself maketh manifest and plain. For there, in all the city, with the whole country or shire adjoining to it, scarcely five hundred persons of all the whole number of men and women, that be neither too old nor too weak to work, be licensed and discharged from labour. Among them be the Siphogants (who, though they be by the laws exempt and privileged from labour), yet they exempt not themselves; to the intent that they may the rather by their example provoke other to work. The same vacation from labour do they also enjoy, to whom the people, persuaded by the commendation of the priests, and secret election of the Siphogants, have given a perpetual licence from labour to learning. But if any one of them prove not according to the expectation and hope of him conceived, he is forthwith plucked back to the company of artificers. And contrariwise often it

chanceth that a handicraftsman doth so earnestly bestow his vacant and spare hours in learning, and through diligence so profiteth therein, that he is taken from his handy-occupation and promoted to the company of the learned. Out of this order of the learned be chosen ambassadors, priests, Tranibores, and finally the prince himself,—whom they in their old tongue call Barzanes, and by a newer name Adamus.

The residue of the people being neither idle, nor yet occupied about unprofitable exercises, it may be easily judged in how few hours how much good work by them may be done and despatched, towards those things that I have spoken of. This commodity they have also above other, that in the most part of necessary occupations they need not so much work as other nations do. For first of all the building or repairing of houses asketh everywhere so many men's continual labour, because that the unthrifty heir suffereth the houses that his father builded, in continuance of time, to fall in decay. So that which he might have upholding with little cost, his successor is constrained to build it again anew to his great charge. Yea, many times also, the house that stood one man in much money—another is of so nice and so delicate a mind, that he setteth nothing by it! and it being neglected, and therefore shortly falling into ruin, he buildeth up another in another place with no less cost and charge. But among the Utopians, where all things be set in a good order, and the commonwealth in a good stay, it seldom chanceth that they choose a new plot to build an house upon. And they do not only

find speedy and quick remedies for present faults, but also prevent them that be like to fall. And by this means, their houses continue and last very long with little labour and small reparations; insomuch that these kind of workmen sometimes have almost nothing to do. But that they be commanded to hew timber at home, and to square and trim up stones, to the intent that, if any work chance, it may the speedilier rise.

Now, sir, in their apparel, mark (I pray you) how few workmen they need. First of all, whiles they be at work, they be covered homely with leather or skins that will last seven years. When they go forth abroad, they cast upon them a cloak which hideth the other homely apparel. These cloaks throughout the whole island be all of one colour, and that is the natural colour of the wool. They, therefore, do not only spend much less on woollen cloth than is spent in other countries, but also the same standeth them in much less cost. But linen cloth is made with less labour, and is therefore had more in use. But in linen cloth, only whiteness, in woollen, only cleanliness, is regarded. As for the smallness or fineness of the thread, that is nothing passed for. And this is the cause wherefore, in other places, four or five cloth gowns of divers colours, and as many silk coats, be not enough for one man. Yea, and if he be of the delicate and nice sort, ten be too few: whereas there one garment will serve a man most commonly two years; for why should he desire mo? seeing if he had them he should not be the better hapt or covered from cold, neither in his apparel any whit the comelier! Where-

fore, seeing they be all exercised in profitable occupations, and that few artificers in the same crafts be sufficient, this is the cause that, plenty of all things being among them, they do sometimes bring forth an innumerable company of people to amend the highways, if any be broken. Many times also, when they have no such work to be occupied about, an open proclamation is made that they shall bestow fewer hours in work; for the magistrates do not exercise their citizens against their wills in unneedful labours. For why, in the institution of that weal-public, this end is only and chiefly pretended and minded—that what time may possibly be spared from the necessary occupations and affairs of the commonwealth, all *that* the citizens should withdraw from the bodily service to the free liberty of the mind, and garnishing of the same. For herein they suppose the felicity of this life to consist.

SIR THOMAS MORE.

(*Robinson's Translation.*)

<i>in-struct-ed</i>	<i>tra-dit-ions</i>	<i>labórious</i>
<i>sci-ence</i>	<i>ex-er-cis-ing</i>	<i>máistrate</i>
<i>dis-creet'</i>	<i>un-pro-fit-a-ble</i>	<i>ärifciers</i>
<i>as-sign</i>	<i>super-flú-i-ty</i>	<i>contemplátion</i>
<i>as-sault'</i>	<i>re-par-á-tions</i>	<i>subtilty</i>
<i>sleight (slít)</i>	<i>speed'-i-li-er</i>	<i>superfluous</i>

hus-band-ry, tillage, agriculture; the business of a husbandman. “Husband” is, lit., “house-dweller”; Icelandic *hús-bóndi*, “master of a house,” *bondi* being for

buandi, “dwelling” (from *bua*, “to dwell”).

pré-cepts, instructions, commands. Lat. *præceptum*, “to instruct”; lit. “to take or seize beforehand”; from *præ*, “before,” and *captum*, “to take.”

no *let*, no hindrance. Compare (below): “he is not *letted*, nor *prohibited*,” both verbs having the same meaning.

fàn-ta-sy, fancy.

Utopia, “No-where;” a merely imaginary place. Grk. *ou*, “not,” and *topos*, “a place.”

licensed, allowed, granted leave. Lat. *licentia*, “licence, freedom,” from *licet*, “it is permitted.”

sól-emn, stated, appointed, usual.

Lit., “occurring every year.” *constrained*’, forced.

náme-ly, specially.

pernicious, very injurious.

Lat. *perniciosus*, from *per*, “through,” and *necare*, “to kill.”

re-pug-nant, opposed to, at war with. Lat. *re*, “back, against,”

and *pugnans*, “fighting.”

pu'-is-sance, power, strength, force. French; from Lat. *posse*, “to be able.”

frùs-trate, bring to nought, cause to be in vain. Lat. *frustra*, “in vain.”

com-mòd-i-ty, advantage, convenience.

vac-á-tion, freedom, immunity.

Lat. *vaco*, “I am free from.” *rè-sid-ue*, what is left behind, the rest. Lat. *re*, “back,” and *sedeo*, “I sit or settle.”

continuance, process; as time continues, or goes on.

these kind of workmen. An erroneous, but still common, expression. “These” (plur.) is used instead of “this” (singular), through the influence of the plural noun following. Say “*this* kind of workmen,” or simply “*these* workmen.”

while, = “while”; a later, but now common, form is “whilst”; the genitive of *while* (“time”); lit. “*during the while* (or “time”) that they be at work.”

mo, = “more”; an old form.

weal-public, or public weal, common-wealth.

gár-nish-ing, adorning, furnishing.

felicity, happiness. Lat. *felicitas*, from *felix*, “happy.”

Point out many examples of tautology.—Parts of the lesson may be rewritten in modern form.

THE SECRET OF " DAVID COPPERFIELD'S " SUCCESS.

I FEEL as if it were not for me to record, even though this manuscript is intended for no eyes but mine, how hard I worked at that tremendous short-hand, and all improvement appertaining to it, in my sense of responsibility to Dora and her aunts. I will only add to what I have already written of my perseverance at this time of my life, and of a patient and continuous energy which then began to be matured within me, and which I know to be the strong part of my character, if it have any strength at all, that there, on looking back, I find the source of my success. I have been very fortunate in worldly matters; many men have worked much harder, and not succeeded half so well; but I never could have done what I have done, without the habits of punctuality, order, and diligence, without the determination to concentrate myself on one object at a time, no matter how quickly its successor should come upon its heels, which I then formed. Heaven knows I write this in no spirit of self-laudation. The man who reviews his own life, as I do mine, in going on here, from page to page, had need to have been a good man indeed, if he would be spared the sharp consciousness of many talents neglected, many opportunities wasted, many erratic and perverted feelings constantly at war within his breast, and defeating him. I do not

hold one natural gift, I dare say, that I have not abused. My meaning simply is, that whatever I have tried to do in life, I have tried with all my heart to do well; that whatever I have devoted myself to, I have devoted myself to completely; that, in great aims and in small, I have always been thoroughly in earnest. I have never believed it possible that any natural or improved ability can claim immunity from the companionship of the steady, plain, hard-working qualities, and hope to gain its end. There is no such thing as such fulfilment on this earth. Some happy talent, and some fortunate opportunity, may form the two sides of the ladder on which some men mount, but the rounds of that ladder must be made of stuff to stand wear and tear; and there is no substitute for thoroughgoing, ardent, and sincere earnestness. Never to put one hand to anything, on which I could throw my whole self, and never to affect depreciation of my work, whatever it was, I find, now, to have been my golden rules.

DICKENS.

(*By permission of Messrs. Chapman and Hall.*)

<i>in-tend-ed</i>	<i>im-prove'-ment</i>	<i>persevérance</i>
<i>trem-ènd-ous</i>	<i>fùl-fùl-ment</i>	<i>diligence</i>
<i>earn'-est-ness</i>	<i>suc-ceed'-ed</i>	<i>determination</i>
<i>com-pléte-ly</i>	<i>de-vòt-ed</i>	<i>thòroughly</i>
<i>per-vèrt-ed</i>	<i>ab-us'-ed</i> (-yúz-)	<i>con-sci-ous-ness</i>

man-u-script (-yù-), writing, done by hand. Lat. *manus*, “hand,” and *scriptum*, “written.” *ap-per-tain'-ing*, pertaining or belonging to. Lat. *ap* (*ad*), “to,” *per*, “through,” and *teneo*, “I hold.”

re-spon-si-bil-i-ty, obligation, duty; the position of being responsible, answerable, or accountable. Lat. *re*, "back, again," and *sponsum* "to promise."

ma-tured', ripened, brought to full growth. Lat. *maturus*, "ripe."

punc-tü-ál-i-ty, regularity, exactness (as to time); doing things at the exact time set apart for them. Lat. *punctum*, "a point."

laud-á-tion, praise. Lat. *laudo* "I praise."

err-á-tic, wandering, having no fixed object or course, irregular. Lat. *errare*, "to wander from the right path."

im-mun'-i-ty (-*myún-*), freedom from an obligation or duty. Lat. *im* (*in*), "not," and *munus*, "service, duty."

dë-prë-ci-á-tion, putting too low a value upon; to slight or despise. Lat. *de*, "down," and *pretium*, "price."

State "David Copperfield's" "Golden Rules," and write one page about them in your own words.

ONE THING AT A TIME.

THE famous De Witt, one of the greatest statesmen of the age in which he lived, being asked by a friend how he was able to despatch that multitude of affairs in which he was engaged, replied that his whole art consisted in doing one thing at once. "If," says he, "I have any necessary despatches to make, I think of nothing else until those are finished; if any domestic affairs require my attention, I give myself up wholly to them until they are set in order."

EUSTACE BUDGELL.

THE HAPPY HEART.

Art thou poor, yet hast thou golden slumbers ?

O sweet content !

Art thou rich, yet is thy mind perplexéd ?

O punishment !

Dost thou laugh to see how fools are vexéd

To add to golden numbers, golden numbers ?

O sweet content ! O sweet O sweet content !

Work apace, apace, apace, apace ;

Honest labour bears a lovely face ;

Then hey nonny nonny, hey nonny nonny !

Canst drink the waters of the crispéd spring ?

O sweet content !

Swimm'st thou in wealth, yet sink'st in thine
own tears ?

O punishment !

Then he that patiently want's burden bears

No burden bears, but is a king, a king !

O sweet content ! O sweet O sweet content !

Work apace, apace, apace, apace ;

Honest labour bears a lovely face ;

Then hey nonny nonny, hey nonny nonny !

DEKKER.

HEALTH AND DISEASE.

So far from the rational care of health being justly chargeable with the imputation of selfishness, so often ignorantly thrown out against it, there is nothing which tends so much to relieve society from the burden of miseries not its own, as each individual taking such care of his constitution as shall enable him to cope successfully with the duties and difficulties of the situation in which he is placed. No man is so thoroughly selfish as he who, in the ardent pursuit of pleasure or of profit, heedlessly exposes his life to the hazard of a die, regardless of the suffering which he may entail upon those who depend on him for support. In the abstract we all admit that the enjoyment of health is the first of earthly blessings, and that without it all others may be lavished in vain ; and yet it has been quaintly asked, "Who is he that values health at the rate it is worth ? not he that hath it ; he reckons it among the common ordinary enjoyments, and takes as little notice of it, or less regards it, than his long-worn clothes ; perhaps more careful of his garments, remembering their price ; but thinks his health costs him nothing, and coming to him at so easy a rate, values it accordingly, and hath little regard to keep it ; is never truly sensible of what he enjoyed until he finds the want of it by sickness ; then health, above all things, is earnestly desired and wished for."

In proportion, however, as we consider the matter with that attention which its importance really deserves, we shall become anxious rather to take care of health when we have it, than first to lose and then exert ourselves to recover it. Such was evidently the feeling which elicited the following remarks from a very clear-sighted author, Dr. Maynwaringe, in his work on the "Method and Means of Health":—

"You that have health," says he, "and know not how to prize it, I'll tell you what it is, that you may love it better, put a higher value upon it, and endeavour to preserve it with a more serious, stricter observance and tuition. Health is that which makes your meat and drink both savoury and pleasant, else Nature's injunction of eating and drinking were a hard task and a slavish custom. Health is that which makes your bed easy and your sleep refreshing; that revives your strength with the rising sun, and makes you cheerful at the light of another day; 'tis that which fills up the hollow and uneven places of your carcase, and makes your body plump and comely; 'tis that which dresseth you up in Nature's richest attire, and adorns your face with her choicest colours. 'Tis that which makes exercise a sport, and walking abroad the enjoyment of your liberty. 'Tis that which makes fertile and increaseth the natural endowments of your mind, and preserves them long from decay, makes your wit acute, and your memory retentive. 'Tis that which supports the fragility of a corruptible body, and preserves the verdure, vigour, and beauty of youth. 'Tis that

which makes the soul take delight in her mansion, sporting herself at the casements of your eyes. 'Tis that which makes pleasure to be pleasure, and delights delightful, without which you can solace yourself in nothing of terrene felicities or enjoyments.

"But now take a view of yourself when health has turned its back upon you, and deserts your company; see then how the scene is changed, how you are robbed and spoiled of all your comforts and enjoyments. Sleep that was stretcht out from evening to the fair bright day, is now all broken into pieces, and sub-divided, not worth the accounting; the night that before seemed short is now too long, and the downy bed presseth hard against the bones. Exercise is now toiling, and walking abroad the carrying of a burden. The eye that flasht as lightning is now like the opacous body of a thick cloud, that rolled from east to west swifter than a celestial orb, is now tired and weary with standing still—that penetrated the centre of another microcosm, hath lost its planetary influence and is become obtuse and dull."

If such, then, be a true picture of the opposite conditions of health and disease, what stronger inducements can any one require to give him an interest in the "study and observance of Nature's institutions," seeing that they are the means by which the "beloved ends and wished for enjoyments" can be attained, and that we "may as likely keep or acquire riches by prodigality, as preserve health and obtain long life by intemperance, inordinate passions, a noxious

air, and such like injurious customs, ways, and manner of living."

GEORGE COMBE.

rà-tion-al	èx-er-cise	ignorantly
chärgé-a-ble	ànx-i-ous	individ'ual
thdr-ough-ly	cor-rùpt-i-ble	constitútion
ex-pós-es	sub-di-víd-ed	celestial
re-gärd-less	in-duce'-ments	plànetary
en-dow'-ments	in-tèm-per-ance	indòrdinate

im-pü-ta'-tion, blame, charge. Lat. *imputo*, "I bring into the reckoning, I enter into the account, I reckon or attribute something as a merit or a fault;" from *im* (in), "into," and *puto*, "I reckon or estimate."

heed'-less-ly, without taking heed, thoughtlessly, carelessly.

en-tail', bring upon, fix upon; as in the case of an estate. To "entail" an estate is to prevent its descent to the heirs in general of the tenant or owner, by limiting it to a particular series of heirs—heirs of *his body*.

in the abstract, as a general principle; without reference to any one case in particular (our own, for example).

lav-ished, bestowed abundantly, profusely, without stint.

quaint'-ly, curiously; in an odd interesting way.

takes as little notice of it (as), or *less* regards it *than*, his long-worn clothes: this would be the full, and more accurate, contraction. State both expressions at length.

e-li-cit-ed, drew forth.

in-junc-tion, enjoining, order, command. Lat. *injunctum*, "to lay upon or impose upon one as a burden;" from *in*, "upon, to," and *junctum* (*jungo*), "to join."

frag-il-i-ty (*fraj-*), weakness; literally, readiness to break. Lat. *fragilis*, from *frag* (*frango*), "break."

terr-ene, of the earth, earthly.

Lat. *terra*, "the earth."

fe-li-ci-ties, blessings, delights.

Lat. *felicitas*, "happiness," from *felix*, "happy."

o-pac-ous, dark, not transparent.

mi-cro-cozm, "little world;"

Greek. *micros*, "little," and *cosmos*, "world." Man was

at one time regarded by some thinkers as a model or epitome of the universe or great world.

ob-tuse', blunt, stupid. Lat. *obtusus*, from *ob*, "against," and *tundo*, "I beat."

prod-ig-ål-i-ty, lavish spending.

EVENING.

Now stir the fire, and close the shutters fast,
 Let fall the curtains, wheel the sofa round,
 And, while the bubbling and loud hissing urn
 Throws up a steamy column, and the cups
 That cheer but not inebriate wait on each,
 So let us welcome peaceful evening in.

Come, Evening, once again, season of peace ;
 Return, sweet Evening, and continue long !
 Methinks I see thee in the streaky west,
 With matron step slow moving, while the Night
 Treads on thy sweeping train ; one hand employed
 In letting fall the curtain of repose
 On bird and beast, the other charged for man
 With sweet oblivion of the cares of day :
 Not sumptuously adorned, not needing aid,
 Like homely-featured Night, of clustering gems !
 A star or two, just twinkling on thy brow,

Suffices thee : save that the moon is thine
 No less than hers, not worn indeed on high
 With ostentatious pageantry, but set
 With modest grandeur in thy purple zone,
 Resplendent less, but of an ampler round.
 Come then, and thou shalt find thy votary calm,
 Or make me so. Composure is thy gift :
 And, whether I devote thy gentle hours
 To books, to music, or the poet's toil ;
 To weaving nets for bird-alluring fruit ;
 Or twining silken threads round ivory reels,
 When they command whom man was born to please,
 I slight thee not, but make thee welcome still.

COWPER.

*col-umn**grànd-eur**àm-pler**de-vôte**twining**ivory*

in-é-bri-ate, intoxicate, make drunk. Lat. *inebriatum*, from *in*, and *ebrius*, "drunk."

me-thinks, (to) me (it) seems. "Thinks" is not part of the common verb "to think," but of a closely connected verb = "to seem," "to appear."

The subject to "-thinks" is the whole statement "I see thee in the streaky west, &c."

ob-liv-i-on, forgetfulness.

sump-tu-ous-ly, expensively, in costly attire. Lat. *sumptus*, "expense."

suffices, is sufficient (or enough) for ; satisfies.

os-tent-á-tious, showy, boastful. Lat. *ostendo*, "I show, I spread before one, display."

pà-geant-ry, great display, showy exhibition.

zone, belt, waist-band.

re-splènd-ent, shining brightly, brilliant. Lat. *re*, "back," and *splendens*, "shining."

vót-ar-y, one that is devoted or attached, as by a vow (Lat. *votum*, "a vow") ; worshipper, lover.

compósure, the composing, or

making peaceful, one's feelings. Express in various ways the meaning contained in the sentence, "Composure is thy gift."

they... whom man was born to please. Explain the reference.
al-lur-ing, enticing, attracting.

THE EAR.

THE second of the Gateways of Wisdom is the Ear. The organ or instrument of hearing is in all its most important parts so hidden within the head, that we cannot perceive its construction by a mere external inspection. What in ordinary language we call the ear is only the outer porch or entrance-vestibule of a curious series of intricate, winding passages, which, like the lobbies of a great building, lead from the outer air into the inner chambers. Certain of those passages are full of air; others are full of liquid; and thin membranes are stretched like parchment curtains across the corridors at different places, and can be thrown into vibration, or made to tremble, as the head of a drum or the surface of a tambourine does when struck with a stick or the fingers. Between two of those parchment-like curtains, a chain of very small bones extends, which serves to tighten or relax those membranes, and to communicate vibrations to them. In the innermost place of all, rows of fine threads, called nerves, stretch like the strings of a piano from the last points to which the tremblings or thrillings reach, and pass inwards to

the brain. If these threads or nerves are destroyed, the power of hearing as infallibly departs, as the power to give out sound is lost by a piano or violin when its strings are broken.

Without attempting to enter more minutely into a description of the ear, it may now be stated, that in order to produce sound, a solid, a liquid, or a gas, such as air, must in the first place be thrown into vibration. We have an example of a solid body giving a sound, when a bell produces a musical note on being struck ; of a liquid, in the dash of a waterfall, or the breaking of the waves ; and of air, in the firing of a cannon, or the blast of a trumpet. Sounds once produced, travel along solid bodies, or through liquids, or through the air, the last being the great conveyor or conductor of sounds.

The human ear avails itself of all these modes of carrying sound ; thus the walls of the skull, like the metal of a bell, convey sounds inwards to the nerves of hearing ; whilst within the winding canals referred to is enclosed a volume of liquid, which pulsates and undulates as the sea does when struck by a paddle-wheel or the blade of an oar. Lastly, two chambers divided from each other by a membrane, the one leading to the external ear, the other opening into the mouth, are filled with air, which can be thrown into vibration. We may thus fitly compare the organ of hearing, considered as a whole, to a musical glass, *i.e.* a thin glass tumbler containing a little water. If the glass be struck, a sound is emitted, during which, not only the solid wall of the tumbler, but the liquid in it, and the

air above it, all tremble or vibrate together, and spread the sound. All this is occurring every moment in our ears ; and as a final result of these complex thrillings, the nerves which I likened to the "piano strings" convey an impression inwards to the brain, and in consequence of this we hear.

We know far less, however, of the ear than of the eye. The eye is a single chamber open to the light, and we can see into it, and observe what happens there. But the ear is many-chambered, and its winding tunnels traversing the rock-like bones of the skull are narrow, and hidden from us as the dungeons of a castle are ; like which, also, they are totally dark. Thus much, however, we know, that it is in the innermost recesses of these unilluminated ivory vaults that the mind is made conscious of sound. Into these gloomy cells, as into the bright chamber of the eye, the soul is ever passing and asking for news from the world without ; and ever and anon, as of old in hidden subterranean caverns where men listened in silence and darkness to the utterance of oracles, reverberations echo along the resounding walls, and responses come to the waiting spirit, whilst the world lifts up its voice and speaks to the soul. The sound is that of a hushed voice, a low but clear whisper ; for as it is but a dim shadow of the outer world we see, so it is but a faint echo of the outer world we hear.

Such, then, is the Ear ; and it is in some respects a more human organ than the Eye, for it is the

counterpart of the human voice ; and it is a sorer affliction to be cut off from listening to the tongues of our fellow-men than it is to be blinded to the sights on which they gaze.

Those who are born, or early become deaf, are far more isolated all their lives from their hearing neighbours, than the blind are from those who see. The blind as a class are lively and cheerful: the deaf are shy and melancholy, often morose and suspicious ; and naturally so, for our interest in each other far exceeds, and ought to exceed, our interest in the world, and from all this human sympathy the deaf are almost totally cut off; whilst the blind, excused from many duties which the seeing only can discharge, are peculiarly free to indulge in gossip with their more favoured neighbours, and can largely exchange opinions with them. Moreover, the blind can scarcely fail to find their own tastes suited in some portion of the talk of their neighbours, and may thus gratify their inclinations to a considerable extent: whilst the deaf, unless they have a great aptitude for such occupations as employ the eye and the hand, are far more narrowed in their circle of studies, and much more solitary than the blind. No one has illustrated this so touchingly as Dr. Kitto in his striking book on the "Lost Senses," when referring to his never having heard the voices of his children: "If there be any one thing arising out of my condition which more than any other fills my heart with grief, it is *this*: it is to see their blessed lips in motion, and to *hear* them not; and to witness others moved to smiles

and kisses by the sweet peculiarities of infantile speech which are incomunicable to me, and which pass by me like the idle wind."

And a similar difference appears, though to a less extent, between those who have lost sight, and those who have lost hearing, after having enjoyed them. Milton, in one of the noblest passages of the "Paradise Lost," bewails his blindness; but in a passage still nobler, he rejoices at what is left to him. I need not quote these passages in full to you, or recall those two sonnets unsurpassed in our language, in the one of which he answers the question he has raised—

"Does God exact day-labour, Light denied?"

and in the other tells his friend that though his eyes:

"their seeing have forgot;
Nor to their idle orbs doth sight appear
Of sun, or moon, or star, throughout the year,
Or man or woman. Yet I argue not
Against Heaven's hand or will, nor bate a jot
Of heart or hope; but still bear up and steer
Right onward."

Contrast with Milton an equally great genius, Beethoven the musician, who in the prime of life had the misfortune to lose his hearing, and could find almost no alleviation of his misery in gratifying the senses which remained. Gloom, anguish, and often the blackest despair, darkened all his later years onwards to the tomb.

Those two mighty masters may be fitly regarded as

furnishing characteristic examples of the relative severity of blindness and deafness, when they befall those who once saw and heard. We should every one of us, I suppose, prefer the lot of Milton to that of Beethoven, and find it more easy to console a blind painter than a deaf musician. I speak thus because I presume it is a matter of universal experience, that we can more easily and vividly recall and conceive sights, than we can recall and conceive sounds. It costs us no effort to summon before us, even though destitute of the painter's gifts, endless landscapes, cities, or processions, and faces innumerable; but even rarely endowed musicians can mentally reproduce few, comparatively, of the melodies or harmonies they know, if debarred from uttering them vocally, or through some instrument. We may test this point by the experience of our dreams.

If I mistake not, though I would not speak dogmatically on this point, we never fully dream a sound. Coleridge in his "Kubla Khan" declares—

"A damsel with a dulcimer
In a vision once I saw:
It was an Abyssinian maid,
And on her dulcimer she played,
Singing of Mount Abora."

But this was the visionary vision of a poet; in dreams, I imagine, we hear no sounds, unless it be those of the world without. We carry on many conversations, and marvellous things are told us; but these, like our waking communings with ourselves, and mental

hummings of tunes, are uttered by voiceless lips in a speechless tongue. Dreamland is a silent land, and all the dwellers in it are deaf and dumb.

How different is it with Sight! No objects beheld by our waking eyes impress us so vividly as the splendid and awful dissolving views which pass before us in the visions of the night. So much is this the case, that, when in daylight life we encounter some reality more startling, more joyful or terrible than most, we utter the strange paradox: "It cannot be true; it must be a dream!" I infer from this that the Blind, who must dream or imagine all the sights which they see, are, *caeteris paribus*, more fortunate than the Deaf, who must dream the sounds which they hear. In the life of Niebuhr there is a striking description of the long and happy hours which his blind old father spent in recalling the striking scenes which in early life he had witnessed in the Holy Land and other eastern countries; and every child who looks into its pillow to see wonders there, could recall a parallel experience: but I know of no corresponding fact in the history of the deaf. At all events, an active and joyous memory of sounds is rare among them. The ear is accordingly an organ which we can worse afford to lose than the eye; and one, therefore, which should be all the more cared for. It is still more susceptible of education than the eye, and can be educated more quickly.

Thus a love of music is much more frequent than a love of painting or sculpture; and you will reach the

hearts and touch the feelings of the majority of mankind more quickly by singing them a song than by showing them a picture. In truth, the sensitiveness of the ear to melody and to harmony is so great, that we not only seek to gratify it when bent upon recreation, but even in the midst of the hardest labour we gratify it if we can. Two carpenters planing the same piece of wood will move their planes alternately; so that, when the one is pushing his forward, the other is drawing his back, thereby securing a recurrence of sounds, which, from their inequality, would be harsh if they were heard simultaneously. In the same way two paviours, driving in stones, bring down their mallets time about; and so do working engineers when they are forging a bar; and the smith, when he has dealt a succession of monotonous blows, relieves his ear by letting his hammer ring musically on the anvil; and I need not tell you how sailors, heaving the anchor or hoisting the sails, sing together in chorus: nor remind you that the most serious of all hard work, fighting, is helped on by the drum and the trumpet.

This natural inclination of man towards music shows itself from the first. The infant's eye, we have seen, is aimless for a season; but its ear is alert from the beginning. It enters upon life with a cry; and its first sorrow, expressed in a sound, is soothed by the first sound of its mother's voice. One half of a nurse's time, I suppose, is spent in singing; and baby, when not sleeping or drinking, is either making or hearing music.

Now is it not a thing to be deeply lamented, that the sensitive ears with which almost every one of us has been gifted by God, are so little educated, that they might as well be stuffed with tow, or plugged with lead, for any good use we make of them ? To be sure we keep them sufficiently open to hear all the gossip about us, and can most of us tell when the cannons are firing ; but as for training them to that exquisite sense of melody or harmony of which they are susceptible, how few do it !

Our national music is famous all the world over ; our song-tunes and our psalm-tunes are listened to with delight in every clime. Yet how few can sing the ever-welcome songs of Burns : in how few churches will you hear psalm-singing that, as music, is other than a grief to an educated ear ! This must be mended ! Let every one so train, and educate, and fully develop the faculty of hearing that is in those ears of his, that he may listen with full delight and appreciation to the songs of birds and the roar of the sea, the wailing of the winds and the roll of the thunder ; and may be able to cheer his soul and calm his heart by hearkening to the music of his fellow-men, and in turn rejoice their hearts by making music for them.

St. Paul says that none of the voices or sounds in the world is "without signification ;" and you will find that, for an appreciating ear, they all have an exquisite meaning ; how much, moreover, education can do for this organ I need not tell you. The subject is far too wide for discussion here ; and I must only allude to it. The following points are worth our notice.

Although the ear has a greatly more limited range in space and time than the eye, it is in a very remarkable respect a more perfect instrument than the organ of sight. The eye can regard but a single object at a time, and must shift its glance from point to point when many objects are before it which it wishes to compare together. And when prosecuting this comparison, between, for example, two bodies, it has in reality but one imprinted on it, and compares the *perceived* image of this one with the *remembered* image of the other. This fact escapes us in ordinary vision, because the impression or shadow of a body on the retina remains for some time after the object is withdrawn from the sphere of sight,—a fact of which we can easily assure ourselves by whirling before our eyes a lighted brand, when it appears, not a succession of flaming points, as it actually is when so whirled, but an unbroken circle of fire. And further, we do not, in looking about us, take notice of the constant motions of the eyeball which bring different objects within the sphere of vision. If, however, whilst looking at no larger surface than a printed page, we close one eye and lay the finger on it, whilst we read with the other, we can trace in the closed eye which follows the motions of the open one, how continually it shifts itself from point to point, and gazes successively at objects which we imagine it to see simultaneously. It is otherwise with the ear. Although perfectly untutored, it can listen to many sounds at once, distinguish their difference, and compare them together. Every one must be conscious of this. The simplest two-part tune

demands from its hearer the simultaneous perception of a bass and a treble note, which impress the ear at exactly the same moment, but are perfectly distinguished from each other. A pianoforte player executing such a tune, requires alternately to shift his eyes from the bass to the treble line, for he cannot see simultaneously the two notes as he can hear them ; and every one may easily observe the contrasted power of the eye and the ear by trying to read simultaneously all the staves of a four-part song, whilst he is hearing it sung. Even an imperfect musical ear will, without an effort, distinguish each of the four voices singing different notes ; whilst the most skilful eye cannot read more than a note or a chord at a time. I suppose every one has noticed the contrast between the air of anxiety which musical performers wear, when playing from music, compared with the serene or exultant look which sits upon their faces when playing from memory or improvising. This applies even to the greatest musicians, and cannot be conquered by education ; for no training will confer upon the eye powers similar to those which the ear possesses without any training.

Our conceptions of the domain of the ear are greatly exalted by a consideration of what has been stated, especially when we add the fact that not merely a two-part or a four-part song, but the most complex harmonies performed by the largest band, may be heard by a single ear. Picture to yourselves the contrast between a great orchestra containing some hundred performers and instruments, and that small music-room

built of ivory, no bigger than a cherry-stone, which we call an ear, where there is ample accommodation for all of them to play together. The players, indeed, and their instruments, are not admitted. But what of that if their music be? Nay, if you only think of it, what we call a musical performance, is, after all, but the last rehearsal. The true performance is within the ear's music-room, and each one of us has the whole orchestra to himself. When we thus realize the wondrous capabilities of the organ of hearing, I think we shall not fail to find an intellectual and æsthetical as well as a great moral admonition in the Divine words, "He that hath ears to hear, let him hear."

DR. GEORGE WILSON (*of Edinburgh*).

in-strū-ment	ĕ-mitt-ed	sub-ter-rá-nean
con-struc-tion	dùn-geon (-jun)	cor-re-spōnd-ing
in-tric-ate	tót-al-ly	sus-cèp-ti-ble
cōr-ri-dors	ùt-ter-ance	mon-ò-ton-ous
vñ-brá-tion	in-tel-lèc-tu-al	ap-prè-ci-á-tion
tam-bour-ine (-én)	æs-thèt-ic-al (ĕs-)	ac-com-mod-á-tion

cannot perceive . . . inspection.

Express the meaning in easier forms.

vñ-ti-bule (-byüł), porch, ante-chamber.

in-fall-i-bly (-föł), without fail, certainly.

pul-sate, beat, throb. Lat. pul-satum, "to strike, to drive frequently or rapidly."

und-ül-ate (-yüł-), wave, move up and down like waves.

Lat. *undula*, "a small wave," from *unda*, "a wave."

*re-vèrb-er-á-tion, echo, the returning or repelling of a sound. Lat. *re*, "back, again," and *verbero*, "I strike, or beat."*

coun'-ter-part, the part that

answers to, or fits with, another.

af-flic-tion, distress (of body or of mind). Lat. *af* (*ad*), “to,” and *flictus*, “dashing or striking together.”

al-lèv-i-á-tion, lightening, mitigation, relief. Lat. *al* (*ad*), “to,” and *levare*, “to lighten, or lift up.”

vis-ion-ar-y (*vizh-on-*), imaginary, not actual or real. Lat. *visionem*, “vision, act of seeing; hence merely imaginary seeing”; from *visum*, “to see.”

dis-solv-ing, melting away, going to pieces and vanishing. Lat. *dis*, “asunder,” and *sollo*, “I loose.”

pár-a-dox, something, though true, yet apparently absurd,

or in contradiction to the received opinion. Grk. *para*, “beside, or contrary to,” and *doxa*, “opinion.”

sim-ul-tá-ne-ous-ly, at one and the same time. Lat. *simul*, “together, at once.”

im-pro-vis-ing, composing or performing without preparation, on the spur of the moment, off-hand. French, *improviser*, from Lat. *im* (*in*), “not,” *pro*, “before,” *visus*, “seen.”

dr-ches-tra (-*kes-*), the part of a theatre, or other public place of amusement, occupied by the musicians; hence, also, a body of musicians.

ad-mon-i-tion, advice, warning. Lat. *ad*, “to,” and *moneo*, “I warn.”

PROVIDING FOR A RAINY DAY.

It is most deeply to be regretted that the working people of England will not, for the most part, see the necessity of saving a portion of their wages in order to have something to live upon when trade is bad, or when ill-health and misfortune come upon them. Too many working-men's families spend all that is earned while trade is brisk, and, when employment

fails, they are as badly off as ever. *There are several distinct reasons why every man or woman should save up some property when possible:—*

- (1) It forms a provision in case of ill-health, accident, want of employment, or other misfortune; it is also wanted for support in old age, or for the helpless widow and orphans of a workman who dies early.
- (2) It yields interest, and adds to a workman's income.
- (3) It enables a man to go into trade, to buy good tools, and to enjoy good credit in case he sees an opportunity of setting up business on his own account.

No man and no woman, who is in the prime of life and earning fair wages, should spend the whole. Even an unmarried person will generally reach a time of life when, through ill-health, old age, or other unavoidable causes, it is no longer possible to get a living. By that time enough ought to have been saved to avoid the need of charity or the degradation of the poor-house. When there is a wife and young family, the need of saving is evidently greater still. Every great storm, colliery explosion, or other great accident, leaves a number of helpless children to be brought up by a struggling widow, or to go on the parish. No doubt people may meet with disasters so unexpected and so great that they cannot be blamed for not providing against them. A man who is blinded, or crippled, or otherwise disabled in early

life, is a proper object of charity, but there would be plenty of benevolent institutions to provide for such exceptional cases, if those who are more fortunate would provide properly for themselves.

It is often said that working-men really cannot save out of the small wages they receive; the expenses of living are too great. We cannot deny that there are labourers, especially agricultural labourers in the South of England, whose wages will not do more than barely provide necessary food and clothing for their families. The weekly earnings of a family in some parts are not more than twelve or fifteen shillings on the average of the year, and sometimes even less. Such people can hardly be expected to save. But this is not the case with the artisans and labourers in the manufacturing districts. They seldom earn less than a pound a week, and often two pounds. The boys and girls, and sometimes the mother of the family, also earn wages, so that when trade is brisk a family in Manchester or Leicester, or other manufacturing town, will get altogether £150 a year, or more. Some kinds of workmen, especially coal-hewers, and iron-puddlers, earn twice that amount in good years, and are in fact better paid than schoolmasters, ministers of religion, and upper clerks. It is idle to say that the better-paid working-men cannot save, and though we cannot make any strict rule, it is probable that *all who earn more than a pound (five dollars, or twenty-five francs) a week, might save something.*

It is easy to prove this assertion by the fact that

when a strike occurs, men voluntarily live on a half or a third of their ordinary wages. Sometimes they will live for three or four months on twelve or fifteen shillings a week, which is paid for their support by their trades-union, or by other unions, which subscribe money to assist them. It is quite common for workmen to pay *levies*, that is, almost compulsory subscriptions of a shilling or more a week, to be spent by other workmen who are *playing*, as it is called, during a long strike. Nobody wishes working-people to live on the half of their wages, but *if, for the purpose of carrying on struggles against their employers, they can spare these levies, it is evident that they could spare them for the purpose of saving*. Then, again, we know that the money spent on drink is enormous in amount; in this country it is about £140,000,000 a year, or about four pounds a year for every man, woman, and child. To say the least, half of this might be saved, with the greatest advantage to the health and morals of the savers, and thus the working-classes would be able to lay by an annual sum not much less than the revenue of the nation.

W. STANLEY JEVONS.

<i>mis-för-tune</i>	<i>re-grètt-ed</i>	<i>families</i>
<i>dc-cid-ent</i>	<i>pro-vìs-ion</i>	<i>necessity</i>
<i>coll-i-er-y</i>	<i>dis-abled</i>	<i>institutions</i>
<i>láb-our-er</i>	<i>ex-cèp-tion-al</i>	<i>especially</i>
<i>as-sèr-tion</i>	<i>op-por-tún-i-ty</i>	<i>agricultural</i>
<i>em-ploy'-ment</i>	<i>un-a-void'-a-ble</i>	<i>manufacturing</i>

de-grad-á-tion, lowering (of one's position or standing), disgrace. Lat. *de*, "down," and *gradus*, "step, rank, degree."

ex-pló-s-ion, violent burst, or blowing up (as with gunpowder, gas, &c.). Lat. *ex*, "out," and *plando*, "I clap hands, or strike (with a noise)."

be-né-vol-ent, well-willing, charitable. Lat. *bene*, "well," and *volens*, "willing, wishing."

vol-unt-ar-i-ly, of one's own will. Lat. *voluntas*, "will," from *volo*, "I wish."

lèv-y, the raising (of men, money, &c.), collection, by assessment. French, *lever* (Lat. *levare*), "to raise."

com-pùl-sor-y, forced, compelled. Lat. *com* (*con*), "together," and *pulsum*, "to drive." The opposite of "voluntary."

sub-scrip-tion, contribution, (usually of money), in aid of some undertaking. Lat. *sub*, "under," and *scriptum*, "to write": the act of subscribing, or *writing* one's name *under* a promise (to pay, &c.); hence the money so paid or promised.

ré-ven-ue, annual income (from rents, taxes, &c.). French, *revenu*, from *revenir*, "to return"; from Lat. *re*, "back," and *venire*, "to come."

A SOFT-HEARTED EXECUTIONER.

[PRINCE ARTHUR, nephew of King John, is in prison, and Hubert is about to murder him at the instigation of his uncle. John was the youngest son of Henry II.; Arthur was the son of Geoffrey, the third son of Henry II., and elder brother of John, and thus, on the principle of hereditary succession, would seem to have the better right to the crown. Arthur is supposed to have been murdered by John at Rouen in 1203, at the age of sixteen.]

SCENE.—*A Room in a Castle.*

Enter HUBERT and Attendants.

Hub. Heat me these irons hot ; and look you stand
Within the arras : when I strike my foot
Upon the bosom of the ground, rush forth,
And bind the boy which you shall find with me
Fast to the chair : be heedful : hence, and watch.

First Attend. I hope your warrant will bear out the
deed.

Hub. Uncleanly scruples ! Fear not you : look to't.—

Exeunt Attendants.

Young lad, come forth : I have to say with you.

Enter ARTHUR.

Arth. Good morrow, Hubert.

Hub. Good morrow, little prince.

Arth. As little prince, having so great a title
To be more prince, as may be.—You are sad.

Hub. Indeed, I have been merrier.

Arth. Mercy on me !

Methinks nobody should be sad but I :
Yet, I remember, when I was in France,
Young gentlemen would be as sad as night,
Only for wantonness. By my christendom,
So I were out of prison, and kept sheep,
I should be merry as the day is long ;
And so I would be here, but that I doubt
My uncle practises more harm to me :
He is afraid of me, and I of him :
Is it my fault that I was Geoffrey's son ?

No, indeed, 'tis not ; and I would to Heaven
I were your son, so you would love me, Hubert.

Hub. (aside). If I talk to him, with his innocent prate
He will awake my mercy, which lies dead :
Therefore I will be sudden, and despatch.

Arth. Are you sick, Hubert ? you look pale to-day :
In sooth, I would you were a little sick ;
That I might sit all night and watch with you :
I warrant I love you more than you do me.

Hub. (aside). His words do take possession of my
bosom.—

Read here, young Arthur. [Showing a paper.

(Aside.) How now, foolish rheum !
Turning dispiteous torture out of door !
I must be brief, lest resolution drop
Out at mine eyes in tender womanish tears.
Can you not read it ? is it not fair writ ?

Arth. Too fairly, Hubert, for so foul effect :
Must you with hot irons burn out both mine eyes ?

Hub. Young boy, I must.

Arth. And will you ?

Hub. And I will.

Arth. Have you the heart ? When your head did
but ache,

I knit my handkercher about your brows,
(The best I had, a princess wrought it me),
And I did never ask it you again ;
And with my hand at midnight held your head ;
And, like the watchful minutes to the hour,
Still and anon cheered up the heavy time,

Saying "What lack you?" and "Where lies your grief?"
 Or "What good love may I perform for you?"
 Many a poor man's son would have lien still,
 And ne'er have spoke a loving word to you ;
 But you at your sick service had a prince.
 Nay, you may think my love was crafty love,
 And call it cunning ; do, an if you will.
 If Heaven be pleased that you must use me ill,
 Why, then you must.—Will you put out mine eyes ?
 These eyes that never did nor never shall
 So much as frown on you ?

Hub. I have sworn to do it ;
 And with hot irons must I burn them out.

Arth. Ah, none, but in this iron age, would do it !
 The iron of itself, though heat red-hot,
 Approaching near these eyes, would drink my tears,
 And quench his fiery indignation
 Even in the water of mine innocence ;
 Nay, after that, consume away in rust,
 But for containing fire to harm mine eyes.
 Are you more stubborn-hard than hammered iron ?
 An if an angel should have come to me,
 And told me Hubert should put out mine eyes,
 I would not have believed him,—no tongue but Hubert's.

Hub. Come forth. [Stamps.

Re-enter Attendants, with Cord, Irons, &c.

Do as I bid you do.

Arth. O save me, Hubert, save me ! my eyes are out
 Even with the fierce looks of these bloody men.

Hub. Give me the iron, I say, and bind him here.

Arth. Alas, what need you be so boisterous-rough ?
I will not struggle, I will stand stone-still.
For Heaven's sake, Hubert, let me not be bound !
Nay, hear me, Hubert ! drive these men away,
And I will sit as quiet as a lamb ;
I will not stir, nor wince, nor speak a word,
Nor look upon the iron angerly :
Thrust but these men away, and I'll forgive you,
Whatever torment you do put me to.

Hub. Go, stand within ; let me alone with him.

First Attend. I am best pleased to be from such a deed.

[*Exeunt* Attendants.]

Arth. Alas ! I then have chid away my friend !
He hath a stern look, but a gentle heart :
Let him come back, that his compassion may
Give life to yours.

Hub. Come, boy, prepare yourself.

Arth. Is there no remedy ?

Hub. None, but to lose your eyes.

Arth. O Heaven, that there were but a mote in yours,
A grain, a dust, a gnat, a wandering hair,
Any annoyance in that precious sense !
Then, feeling what small things are boisterous there,
Your vile intent must needs seem horrible.

Hub. Is this your promise ? go to, hold your tongue.

Arth. Hubert, the utterance of a brace of tongues
Must needs want pleading for a pair of eyes :
Let me not hold my tongue,—let me not, Hubert !
Or, Hubert, if you will, cut out my tongue,

So I may keep mine eyes : O, spare mine eyes,
Though to no use but still to look on you !
Lo, by my troth, the instrument is cold
And would not harm me.

Hub. I can heat it, boy.

Arth. No, in good sooth ; the fire is dead with grief,
Being create for comfort, to be used
In undeserved extremes : see else yourself ;
There is no malice in this burning coal ;
The breath of Heaven hath blown his spirit out,
And strewed repentant ashes on his head.

Hub. But with my breath I can revive it, boy.

Arth. And if you do, you will but make it blush
And glow with shame of your proceedings, Hubert :
Nay, it perchance will sparkle in your eyes ;
And, like a dog that is compelled to fight,
Snatch at his master that doth tarre him on.
All things that you should use to do me wrong
Deny their office : only you do lack
That mercy which fierce fire and iron extends,
Creatures of note for mercy-lacking uses.

Hub. Well, see to live ; I will not touch thine eyes
For all the treasure that thine uncle owes :
Yet am I sworn, and I did purpose, boy,
With this same very iron to burn them out.

Arth. O, now you look like Hubert ! all this while
You were disguised.

Hub. Peace : no more. Adieu.
Your uncle must not know but you are dead :
I'll fill these dogged spies with false reports.

And, pretty child, sleep doubtless and secure
That Hubert, for the wealth of all the world,
Will not offend thee.

Arth. O Heaven ! I thank you, Hubert.

Hub. Silence ; no more : go closely in with me.
Much danger do I undergo for thee. [*Exeunt.*]

SHAKESPEARE.

war'-rant
un-clean'-ly
hànd-ker-cher
pràc-tis-es

wom'-an-ish
an-noy'-ance
màl-ice
ùt-ter-ance

resòlution
rèmedy
ìnstrument
disguised

heat me these irons hot. ' Heat (to or for) me these irons (so that they shall be very) hot.' Compare: "The lightning struck the man dead"; "work the chain clear of the stone"; "keep these papers secret."

ar-ras, tapestry, curtains or hangings woven with figures. From *Arras*, a town of France, where such drapery was first made.

the boy which. "Which" for "whom," in reference to "boy." This was quite common when Shakespeare wrote, nearly 300 years ago. Compare also: "Our Father, *which* art in heaven."

me-thinks. See page 309. The

subject is "(that) nobody should be sad but I."

wan-ton-ness, careless sport, frolic.

christ-en-dom (*krisn-dom*), the fact of being a Christian. "By my Christendom" = "as (true as) I am a Christian." The common use of "Christendom" now is to denote the area of acceptance of the Christian faith.

so, provided that, if. Compare (below): "So you would love me."

rheum (*rùm*), flow (of tears, here); usually, such a discharge as that from the nose in consequence of cold. Grk. *rheuma*, from *rheo*, "I flow."

foolish rheum. Is it the

“rheum” that is “foolish”? Give the meaning at length. Compare “your sick service” (below).

dis-pit-e-ous, full of *despite* or malice, spiteful. Not connected with “piteous” in derivation, although it looks very like a negative (with prefix *dis*), and the meaning might suit this view. “Despise” is Lat. *despectus*, from *de*, “down,” and *spectum* (*specio*), “to look”—“looking down upon, despising, scorning, hating.”

nor never. Two negatives were often used to make a denial. Now one only is permitted.

heat, for “heated”; the “-ed” being frequently dropped in the past part., especially of verbs ending in -t. “Create,” for “created,” occurs below. *in-dig-ná-tion*, anger (usually mixed with disdain or contempt).

EXERCISE.—Narrate the incident in prose.

boist-er-ous-rough. The meanings of two adjectives are joined; perhaps the first is somewhat of the nature of an adverb.

ang-er-ly. What is the form now used?

tarre, provoke, egg on.

fire and iron extends. “Extends” may be the Northern plural in -s, often used in Shakespeare’s time. For example, in the *Tempest*, he says: “What *cares* these roarers (the waves of the sea) for the name of king?” If, however, it be the singular form, how would you explain it after two nouns joined by “and”? *creat-tures*, objects, (created) things.

owes, possesses.

doubt-less, without doubt or fear.

se-cure', sure, firmly persuaded.



ROCKS.

1. PLANT-ROCKS.

CERTAIN rocks owe their origin to the accumulation of what are called organic remains, or fossils, that is, the remains of plants or animals. In the present lesson we will confine our attention to those rocks which have been formed out of the remains of plants. As an illustration let me ask you to examine carefully a *piece of coal*. If you master all that it has to tell you, you will not have much difficulty in tracing out the history of other rocks belonging to this series.

You know well the general appearance of coal. Did you ever notice that though brought to the fireplace in rough, irregular lumps, it has nevertheless an arrangement in layers like the sedimentary rocks? Try to break a big solid piece of coal, and you find that it usually splits more easily in one direction than in any other. This direction is that of the thin layers of which the coal consists. If you want large pieces of coal to burn up quickly and make a good fire, you will take care so to put them in the grate that those layers shall be more or less upright. In that position the heat splits them up.

Now look at one end of a lump of coal, where the edges of the layers are exposed. You cannot follow them with the same ease as in the case of a piece of

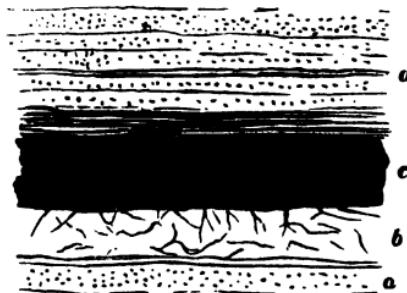
shale, for they seem to blend into one another. But you may notice that among the layers of hard, bright, glossy substance, there occur others of a soft material like charcoal. A mere general look at such a piece of coal would show you that it is stratified.

You know that coal can be burnt away so as to leave only ashes behind, and that in this respect it resembles wood and peat. Chemists have analysed coal and found that it consists of the same materials as wood or peat, and that in reality it is only so much vegetation which has been pressed together, and gradually changed into the black substance now used as fuel.

Let us suppose ourselves at a coal-mine, with the object of seeing exactly how the coal lies before it is dug out of the earth and broken up into the small pieces which we burn in our grates (see figure on page 339). We descend in one of the cages by which the miners are let down into the pit. After our eyes have got a little used to the darkness at the bottom, we set out, lamp in hand, along one of the roadways, and reach at last a part of the pit where the miners are at work removing the coal. Now, first of all, you see that the coal occurs as a bed, having a thickness of a few feet. This bedded character agrees with what you have already noticed as to the internal layers in the stone, and confirms you in believing that coal is a stratified rock. Next observe that the pavement on which the coal rests, and the roof which covers it, are both made of very different materials from the coal itself. Were you to cut a trench or section

through pavement, coal, and roof, you would find some such arrangement as in the figure below. You would prove beyond any doubt that the bed of coal lies among beds of common sedimentary rock.

But what is this layer marked *b*, forming the floor or pavement on which the coal lies? Examine it with attention and you recognise it to be a bed of dark clay, with abundance of black streaks and branching strings, like roots, spreading through it. You may trace these



Section of a Coal-seam with its roof and pavement. *a*. Sandstones, Shales, &c.
b. Under-clay forming pavement of Coal (*c*). *d*. Sandstones and Shales, forming roof of Coal.

root-like strings into the bottom of the very coal itself. If you visited other pits you would find each coal-seam to lie usually on such a bed as this. Now why should the coal rest rather on a bed of clay or shale than on one of sandstone or any other sort of rock? If you noticed that this peculiar pavement met you in every pit you visited, would you not begin to feel quite sure that the constant association of the coal and its under-clay could not be a mere accident but must have a meaning?

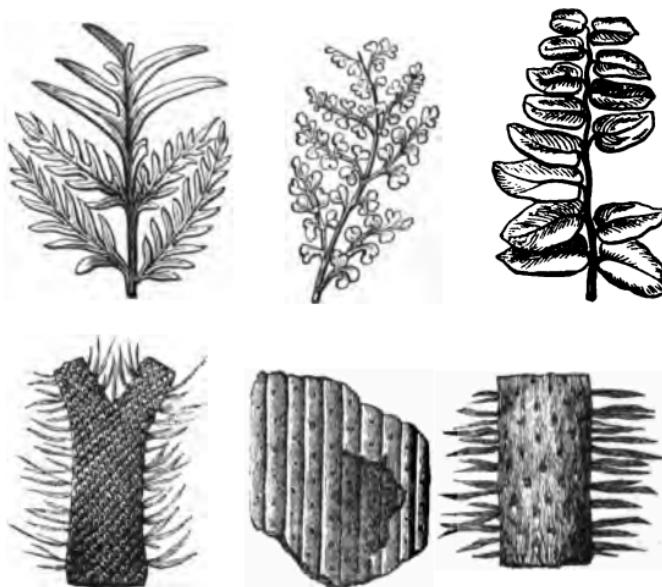
Now look at the under-clay again. Does it not remind you of a bed of soil with roots branching through it? With this idea suggested to your mind, the more you examine the rock the clearer will this resemblance appear, until you are driven to conclude that in truth *the under-clay is an old soil, and the bed of coal represents the vegetation which grew upon it.* (See the figure on page 341).

Each coal-seam has been in truth at one time a dense mass of vegetation growing on a wide marshy flat, somewhat like the swampy jungles of tropical countries at the present day. These great marshy plains had a bottom of muddy soil on which the rank vegetation grew, and it is this very soil which you still see in the under-clay.

Can we tell anything about the kind of plants which flourished over these plains, and accumulated into the thick mass which formed the coal? Not much can usually be made out from the coal itself, for the vegetation has been so squeezed and altered as to destroy the leaves and branches of the plants; yet in many kinds of coal parts of the old plants have been changed into a sort of charcoal, which soils the finger, and shovys traces of the vegetable fibre like any ordinary charcoal. If you cut slices from coal, fix these on glass, rub them down until they are so thin as to be transparent, and place them under a microscope, you may often find that the coal contains millions of little seed-vessels, or, as they are called, *sporangia.* These were shed by plants somewhat like the club-mosses of our own moors and hills, but much larger in size, and must have fallen so

thickly over the flat grounds as to form a kind of mould or soil upon them.

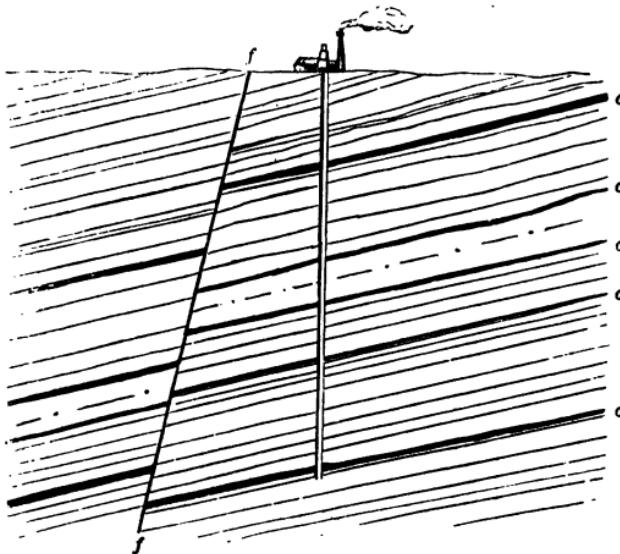
But though the larger plants have not usually been preserved well in the coal itself, you may sometimes find them in great perfection and beauty in the beds of rock above or below the coal. Some of the common



Plants out of which Coal has been formed.

varieties are shown in the above figure. Now and then you may see these plants lying across each other and all squeezed flat, but still retaining much of their original gracefulness, upon the bottom of the bed of rock which forms the roof of the galleries as you go through the coal-mine.

Each coal-seam, once a luxuriant surface of vegetation, open to the sunlight, and stretching over many square miles, now lies buried deep within the earth, under huge masses of rock, which must be bored through before the coal can be reached. In many parts of Britain the coal-pits are more than a thousand feet deep. And yet down



Section of the Strata in a Coal-pit. *c*, Coal-seams. *f*, a fault or fracture of the rocks.

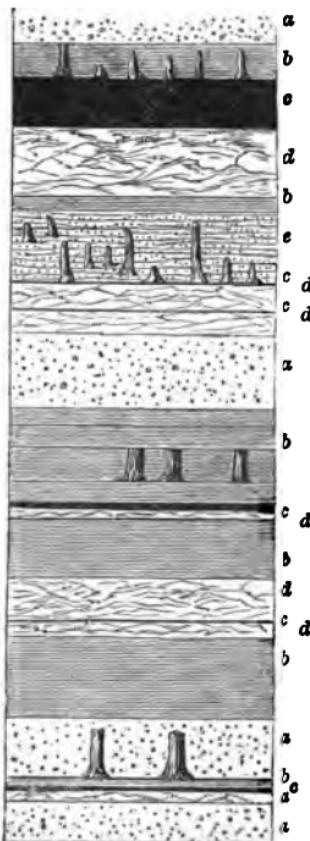
at the bottom of each of these pits lies the coal-seam, which we have found to be a buried swamp or jungle. If you could look at all the rocks which have been cut through in making the long shaft of the pit, you would usually find among them other coal-seams than the one at the bottom. In fact, several seams are sometimes worked for coal at different levels in the same pit. You

will understand their position from the section in the preceding figure, which shows how the rocks lie one above another in one of these pits. You notice that the seam down to which the shaft has been sunk is the fifth of the series, but it is chosen in the meantime, probably because it is a better kind of coal than the other four seams above it, and therefore brings more money in the market.

In such a section as that in the preceding figure, which shows only what may be met with in any coal-field, we see that the strange revolution whereby a green waving forest has been buried underground must have happened not once only, but many times; for every separate coal-seam was evidently at one time a verdant plain, open to the sun, and bright with many a graceful tree and fern. And still more, besides the evidence of the coal-seams, upright stems of trees, now turned into stone, are sometimes found standing in the sandstones and shales, in the very position in which they grew, with their roots even yet imbedded in the ancient soil. (Figure on page 341.)

The lowest strata are of course the oldest. Hence the undermost coal-seam must have been buried before the later forests could spring up on its site. It grew probably in a wide, marshy plain, which when the ground sank down became a white sheet of water. Sand and mud were carried into this water, and laid down upon the submerged forest. These sedimentary deposits may now be traced in the beds of sandstone and shale which overlie the coal-seam. The sand and

mud brought into the wide and shallow sheet of water might in the end fill it up so that at length, as the muddy bottom rose to the surface, a new mass of vege-



Section of a part of the Cape Breton Coal-field, showing seven ancient soils, with remains of as many forests. (R. Brown.) *a* Sandstones, *b* and *e*, Shales, *c*, Coal-seams; *d*, Under-clays, or Soils.

tation would take root and form as luxuriant a growth as the buried forest had done. But after this had taken place, the downward movement of the ground again

showed itself, for this second forest was carried beneath the water and covered with renewed accumulations of sand and mud.

Hence we learn that our coal-fields were formed in regions which were sinking, and that the downward movement was not continuous, but went on at intervals. That it must have been prolonged through vast periods of time is apparent from the fact that the strata of the coal-fields are many thousands of feet thick, and must hence have needed long ages for their formation.

BOGS AND PEAT-MOSSES.

You have no doubt read about, you may even have seen, the bogs and peat-mosses so abundant in Ireland, Scotland, and some parts of England. If you have not, you must imagine a wide, flat space of brown moor and green marsh, in many parts so soft and wet that you would sink deep into the black mire if you tried to walk on its treacherous surface ; in other parts having a firmer crust, which shakes under your feet as you jump from one dry standing-place to another. Such a flat space is called a bog in Ireland, whilst in Scotland and England it is known as a moss, or peat-moss. Of the whole surface of Ireland nearly a seventh part is believed to be occupied with bogs, and in many parts of Scotland too they occur in great numbers.

Visiting one of these places you notice that round its edges it is usually quite firm. It may even have become so dry over the very centre as to be ploughed up and to furnish crops of turnips and potatoes. Wherever

you can catch a sight of the substance of which the moss consists, you find it to be a black or dark brown sort of mould called peat, formed of the remains of plants firmly matted together. Over the whole of the moss this peat extends as a bed, sometimes thirty or forty feet thick. It is simply a vegetable deposit, and in this and other respects resembles coal.

Such being its composition, it may of course be readily burnt, so that at the mosses it is dug out in pieces, which are dried and used for fuel. Over great parts of Ireland and wide regions of Scotland the peasantry have no other fuel than this peat, which they cut every summer from the mosses.

In the figure on next page, a representation is given of one of these cuttings for peat. It is in such places that the mode of origin of the deposit can best be studied, and as the tracing out of the formation of a peat-moss furnishes a good example of the way in which geologists try to find out the past history of the earth, let me ask you to suppose yourselves looking into the opening which has been made in the peat-moss drawn in the figure.

Below the surface of coarse grass and heather lies the peat, a brown fibrous mass in the upper parts, but getting more and more compact towards the bottom, till it passes perhaps into a dark compact substance in which no trace of any fibres may be discernible. Down below the bottom of the peat there sometimes lies a layer of fine clay, containing the remains of shells which are only found living in fresh water. Now and then, too, a

rude canoe, hollowed out of the trunk of an oak tree, is dug up from the bottom of a peat-moss—a relic of some of our uncivilised ancestors.

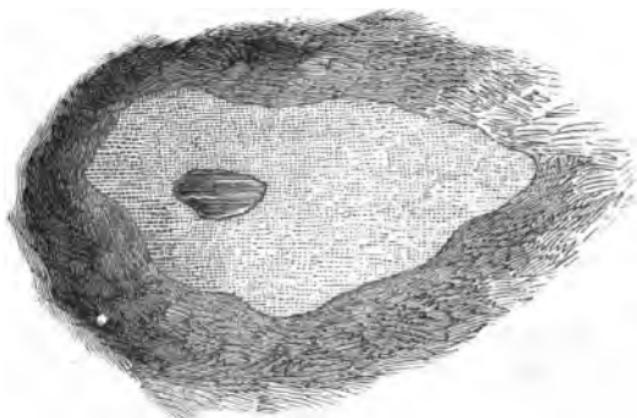
Here, then, is a little bit of geological history. Now put these separate facts together and make out the story of the peat-moss.



Section of a Peat-Moss, where the Peat is cut and piled into small stacks to dry for fuel.

Beginning at the bottom, the oldest formation you meet with is the layer of clay just referred to. You have already learnt that such a layer must have been laid down under water. If it should happen to be thick, it will suggest to you that probably this water was not a mere shallow pool or brook, but had some depth and

extent. But the shells indicate further that the water must have been that of a lake, for they are such shells as you might find still living in the lakes of the neighbourhood. The first point you settle, therefore, is that before a peat-moss existed here, a lake occupied its site. You may even yet trace what the boundaries of this lake were, for the slopes which rise all round the flat peat-moss must in the same way have surrounded the old



Ground-plan or Map of a Peat-Moss filling up a former Lake, and with a portion of the Lake still unfilled up.

sheet of water, whereon our rude forefathers floated the canoes which are now and then dug up from the bottom of the mosses.

Above the layer of clay which marks the former lake-bottom comes the bed of peat, made up wholly of vegetable materials. Evidently it has taken the place of the water. The plant-remains have filled the shallow lake up, and converted it into a peat-moss. In many

places you may see this process actually going on still. In such a peat-moss, for example, as that shown in the preceding figure, it is evident that the little patch of water in the centre is only a remnant of the lake, which once covered the whole hollow. At the edge of that remaining pool you find that the marshy vegetation out of which the peat has been formed is growing into the water on all sides. Put a pole down to the bottom and you will stir up the fine black or brown peat, formed out of decayed roots and fibres. Here there is still some water between the dead peaty matter at the bottom and the growing plants which form a sort of crust over the top. But in the end the plants will fill up the whole of this intermediate space, and then even the centre will be converted into a solid bed of peat, as all the outer parts of the moss have already been.

Peat-mosses have been formed in marshy grounds or shallow lakes by the growth and decay of plants, and the accumulation of their remains on the place where they lived and died. Like coal-seams they show how in certain circumstances the growth and decay of plants may give rise to thick and widespread deposits.

<i>ex-dm-ine</i>	<i>ma-té-ri-als</i>	<i>illustrátion</i>
<i>ar-ránge-ment</i>	<i>po-ta'-toes</i>	<i>vegetátion</i>
<i>é-vid-ence</i>	<i>un-civ-il-isé</i>	<i>associátion</i>
<i>im-bédd-ed</i>	<i>an-ces-tors</i>	<i>microscope</i>
<i>de-pós-its</i>	<i>in-ter-médi-ate</i>	<i>luxúriant</i>
<i>dc-cíup-ied</i>	<i>sur-round'-ed</i>	<i>geológical</i>

ac-cum'-ul-á-tion (*ak-kyúm-yúl-á-shon*), heaping up, gathering in a heap. Lat. *ac* (*ad*), “to,” and *cumulus*, “a heap.”

or-gan-ic, having organs, relating to organs. “A plant or animal lives, moves, and grows by means of what are called *organs*” — *working parts, instruments*, whereby all its operations or functions are carried on. Grk. *organon*, “an instrument,” from *ergo*, “I do work.”

foss-il, lit. what is dug up out of the earth; hence the dug-up remains of plants and animals imbedded in rock. Lat. *fossus*, “dug.”

séd-i-mént-ar-y, consisting of, or formed from, sediment—the matter that settles down at the bottom of a liquid. Lat. *sedeo*, “I sit or settle.”

strát-i-fied, formed or disposed in *strata*, or layers. Lat. *stratum*, “to lay out, to lay flat.”

án-a-lyse, to separate a thing into its component parts, to take it to pieces. Grk. *and*, “up,” and *luo*, “I loosen, separate.”

spor-án-gi-a, seed-vessels, the case or covering containing the spores (or seeds) of certain plants. Grk. *spora*, “seed,” and *angos*, “a vessel.”

sub-mèrged, sunk under water. Lat. *sub*, “under,” and *mergo*, “I plunge.”

treach'-er-ous (*tréts'h-*), ready to betray, not to be relied on.

rém-nant, contracted from the older “remanent”; from Lat. *re*, “back,” and *maneo*, “I remain, stay, am left.”

2. ANIMAL-ROCKS.

AT first, when you think of it, there seems not much chance of animal remains accumulating to such a depth as to form any well-marked deposit. Though the air may be filled with insects, though birds in abundance may be seen and heard as the summer slips away, though in our meadows and woodlands rabbits, hares, moles, and many other creatures live in great numbers,

yet you nowhere see their remains forming a deposit on the surface. Nay, you comparatively seldom see a dead animal at all. They creep into holes and die there, and their bodies gradually crumble away and disappear. But if you look at the right places you will discover that the remains of animals as well as of plants, and indeed much more than plants, form great accumulations.

In the bed of clay under a peat-moss, the shells which are sometimes to be seen mouldering away belong to certain kinds which live in lakes. In some parts of the country the bottoms of the lakes are covered with similar shells, so much so that if you were to take a boat and begin to dredge up some of the soft mud from the bottom of one of these sheets of water, you would find it to consist of a kind of white chalky substance, or marl, as it is called, made up of shells in all stages of decay. The animals which live in these shells so abound in the water that as they die their shells form a layer over the floor of the lake. Now and then such a lake has been either gradually filled up by being choked with vegetation and silt, or has been drained artificially so as to be converted into dry land. Digging down on the site of that vanished lake, you would come to the fresh-water marl, forming a bed or layer several feet, or even yards, in thickness. Perhaps you would meet with the skeleton of some deer, or wild ox, or other animal, which had somehow been drowned in the old lake; or you might disinter the canoe or stone-hammer or other relic of the early human races, which peopled the country before so

many of its lakes and forests had disappeared. In some districts where limestone is scarce, the marl of the old lakes has been dug up in large quantities as a manure for the land. Hence you learn that even the frail shells which are to be seen on the stones and reeds along the margin of a lake may afford an illustration of how rocks are formed out of the remains of animals.

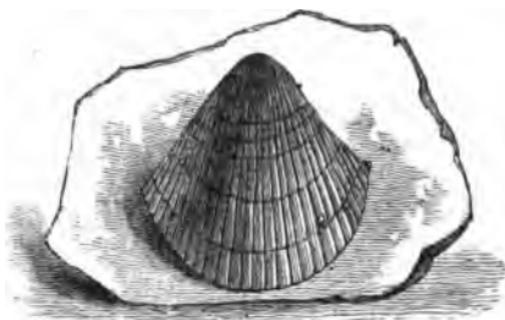
It is on the floor of the great sea, however, that the most wonderful examples occur of the way in which rocks are gradually built up from the remains of animals to a depth of many hundreds or thousands of feet, and over distances of many hundreds of miles.

Soundings have been made over many parts of the sea, and something is now known about its bottom, though much still remains to be discovered. The Atlantic Ocean is the best known. In sounding it, before laying down the telegraphic cables which stretch across under the sea from this country to America, a depth of 14,500 feet, or two miles and three quarters, was reached. But about 100 miles south of the Island of St. Thomas a sounding has more recently been obtained of nearly four miles and a half. If you could lift up Mont Blanc, which is the highest mountain in Europe, reaching a height of 15,744 feet above the sea, and set it down in the deepest part of the Atlantic, it would not only sink out of sight, but its top would actually be nearly a mile and a half below the surface. Thus you can see how difficult it must be to work a sounding-line several miles long. Yet men are able not only to measure the depth of the water, but, by means

of the instrument called a dredge, to bring up bucketfuls of whatever may be lying on the sea-floor, from even the deepest parts of the ocean. In this way during the last few years a great deal of additional knowledge has been gathered as to the nature of the sea-floor and the kind of plants and animals which live there. We now know that even in some of the deepest places which have yet been dredged there is plenty of animal life, such as shells, corals, star-fishes, and still more humble structures.

To the west of Britain the Atlantic soon and suddenly deepens. Its floor then stretches away to Newfoundland as a vast plain, the lowest part of which, as was mentioned above, is about 14,500 feet below the waves. While in the shallower parts of the sea the bottom was found, on sounding, to be covered with sand, gravel, or mud, from the deeper parts there came up with the sounding-lead a peculiar grey sticky substance known as *ooze*, which must stretch over that wide deep-sea basin for many thousands of square miles. This ooze when dried looks like a dirty kind of chalk. You may purchase a minute quantity of it prepared on a glass slide for the microscope. Looking at such a slide with only your naked eyes, you might suppose that the little specks you see are merely so many grains of dust upon the glass. But place them under a strong magnifying glass or microscope, and you discover that they consist of minute shells called *Foraminifera*, some of them quite entire, others broken, and all most delicately sculptured and punctured. As you look at these graceful

forms, reflect that they are crowded together, millions upon millions, over the floor of the Atlantic, that as they die their shells gather there into a wide-spread deposit, and that as fresh generations spring up one after another this deposit is continually getting deeper. After the lapse of centuries, if the deposit were to remain undisturbed, and if we could set a watch to measure its growth, we should find it to have risen upward and to have enclosed the remains of any star-fishes or other



A piece of Chalk with Shell in it.

sea-creatures which chanced to die and leave their remains upon the bottom. Hundreds of feet of such slow-formed deposit have no doubt already been laid down over the bottom of the ocean between Ireland and Newfoundland. Here then is a second and notable example of how a deep and far-spread mass of rock may be formed out of the remains of animals.

Further remarkable examples might easily be produced. Oysters, for example, grow thickly together; and their shells, mingled with those of other similar

creatures, form what are called shell-banks. Again, in the Pacific and the Indian Oceans, a little animal, called the coral-polyp, secretes a hard limy skeleton from the sea-water; and as millions of these polyps grow together, they form great reefs of solid rock, which are sometimes, as in the Great Barrier Reef of Australia, hundreds of feet thick and a thousand miles long. It is by means of the growth of these animals that those wonderful rings of coral-rock or Coral Islands are formed in the middle of the ocean.

Now return once more to our piece of chalk and compare it with the ooze of the Atlantic. At the first glance in many a piece of chalk you can see shells, corals, sea-urchins, and other marine remains, either entire or in fragments (figure on page 351.) These are enough to convince you that chalk must have been formed under the sea. But a little further examination will show that the chalk not merely contains animal remains, but is altogether made up of them. Take a fine brush and rub off a little chalk into a glass of clear water; then shake the water gently, and let it stand for a while until you see a layer of sediment on the bottom. Pour off the water and place a little of this sediment upon a piece of glass, and look at it under the microscope or magnifying glass. You will thus find that it consists of minute shells, pieces of coral, fragments of sponges, and white particles which are evidently the broken-down remains of shells. You must not be disappointed if for a time none of the chalk which you brush off shows you any distinct organism, but only shapeless white

grains. All these grains are only the mouldered fragments of organisms, and you must search among them until you find some still perfectly preserved and entire specimens. When successful you will meet with an assemblage of minute organic remains quite like those in the Atlantic ooze.



Piece of Limestone, showing how the stone is made up of animal remains.

But chalk is only one of many rocks composed altogether of the remains of animals. Most of the limestones have been formed out of these materials. Here, for instance, is a piece of limestone which has been lying exposed to the air for many years, and you see how its surface is crowded with bits of "stone-lilies," corals, shells, and other remains. The sight of such a piece of stone as this at once sets you thinking about some old sea-floor. You can picture to yourselves

how all these delicately sculptured little fragments once formed parts of living creatures, which moved or grew beneath the clear waters of the sea. The bit of limestone becomes to you a kind of model of what a sea-floor must be, and reminds you of what you may even have seen with your own eyes at the bottom of some of the rocky pools upon the beach.

If a little fragment of limestone might suggest these thoughts to you, what would you think if you were taken to places where all the hills are made up of such limestone—vast piles of rock two or three thousand feet thick, and stretching over the land for hundreds of square miles? And yet you may meet with such wonderful masses of limestone crowded with the remains of old sea-creatures, in almost every country of the world. In Britain, for example, the hills and dales of a great part of Derbyshire and Yorkshire are built up of limestone. Looking up one of these wonderful valleys you see the beds of limestone winding along either side and rising in broad terraces, one above the other, as far as the eye can reach. In walking along the surface of one of these high hill-terraces, you are really walking on the bottom of an old sea, and if you stop anywhere to look at the rock under your feet, you will see that it is only a mass of the crowded remains of the little animals which peopled the waters of that sea. Somehow the sea-bed has become dry land, and the thick animal deposits of its bottom have hardened into limestone, out of which high hills and wide valleys have been formed.

Still thicker masses of similar limestone occur in

Ireland. Some of the giant mountain chains of the world consist in great measure of limestone. Among the lofty crests of the Alps, for example, and in the chain of the Himalaya, limestone, made up of the remains of marine animals, is found to constitute great ranges of the high ground, on which the eternal snows rest, and from which the glaciers descend into the valleys.

ARCHIBALD GEIKIE.

<i>sound'-ings</i>	<i>vàn-ished</i>	<i>accúmulating</i>
<i>At-lànt-ic</i>	<i>gèn-er-á-tions</i>	<i>comparatively</i>
<i>ac-tü-al-ly</i>	<i>un-dis-turbed</i>	<i>gradually</i>
<i>shdl-low-er</i>	<i>not-a-ble</i>	<i>artificially</i>
<i>dè-lic-ate-ly</i>	<i>dis-ap-point'-ed</i>	<i>additional</i>
<i>sculp-tured</i>	<i>as-sèm-blage</i>	<i>telegraphic</i>

mould'-er-ing (*mold-*), decaying, crumbling away, turning into *mould* (fine soft earth, dust). *silt*, the deposit of fine mud, sand, or clay, in lakes, estuaries, &c.

dis-in-tér, dig out; lit. to reverse the action of interring. Lat. *dis*, “asunder” (reversing the action of verbs it is prefixed to), *in*, “into,” and *terra*, “the earth.”

min-ute', very small. Lat. *min-nútus*, lit. “made less” (Lat. *minus*, “less”), “broken to pieces.”

ör-gan-ism, a body furnished with organs.

for-a-min-i-fer-a, organisms having many holes in their shell, or chambers or cells. Lat. *forámen*, “a small opening” (from *foro*, “I bore”), and *fero*, “I bear.”

punc-tured, pricked, pierced (with small holes). Lat. *punctum*, “to prick, stab.”

pol-y-p, a water-animal, of low organisation, with numerous foot-like organs round the mouth. Grk. *polys*, “many,” and *pous*, “a foot.”

sea-ür-chin, a water-animal, with prickly spines (like a hedgehog’s bristles) on its shell.

THE DESERTED VILLAGE.

SWEET AUBURN ! loveliest village of the plain ;
Where health and plenty cheered the labouring swain,
Where smiling spring its earliest visit paid,
And parting summer's lingering blooms delayed :
Dear lovely bowers of innocence and ease,
Seats of my youth, when every sport could please,
How often have I loitered o'er thy green,
Where humble happiness endeared each scene !
How often have I paused on every charm,
The sheltered cot, the cultivated farm,
The never-failing brook, the busy mill,
The decent church that topt the neighbouring hill,
The hawthorn bush, with seats beneath the shade,
For talking age and whispering lovers made !
How often have I blest the coming day,
When toil remitting lent its turn to play,
And all the village train, from labour free,
Led up their sports beneath the spreading tree,
While many a pastime circled in the shade,
The young contending as the old surveyed ;
And many a gambol frolicked o'er the ground,
And sleights of art and feats of strength went round :
And still, as each repeated pleasure tired,
Succeeding sports the mirthful band inspired ;
The dancing pair that simply sought renown,
By holding out, to tire each other down ;

The swain mistrustless of his smutted face,
While secret laughter tittered round the place ;
The bashful virgin's side-long looks of love,
The matron's glance that would those looks reprove.



These were thy charms, sweet village ! sports like these,
With sweet succession, taught even toil to please :
These round thy bowers their cheerful influence shed :
These were thy charms—but all these charms are fled.

Sweet smiling village, loveliest of the lawn,
Thy sports are fled, and all thy charms withdrawn ;
Amidst thy bowers the tyrant's hand is seen
And desolation saddens all thy green :
One only master grasps the whole domain,
And half a tillage stints thy smiling plain.
No more thy glassy brook reflects the day,
But, choked with sedges, works its weedy way ;
Along thy glades, a solitary guest,
The hollow-sounding bittern guards its nest ;
Amidst thy desert walks the lapwing flies,
And tires their echoes with unvaried cries ;
Sunk are thy bowers in shapeless ruin all,
And the long grass o'ertops the mouldering wall ;
And, trembling, shrinking from the spoiler's hand,
Far, far away thy children leave the land.

Sweet was the sound, when oft at evening's close
Up yonder hill the village murmur rose.
There, as I pass'd with careless steps and slow,
The mingling notes came softened from below ;
The swain responsive as the milk-maid sung,
The sober herd that lowed to meet their young,
The noisy geese that gabbled o'er the pool,
The playful children just let loose from school,
The watch-dog's voice that bayed the whispering wind,
And the loud laugh that spoke the vacant mind ;—
These all in sweet confusion sought the shade,
And filled each pause the nightingale had made.
But now the sounds of population fail,

No cheerful murmurs fluctuate in the gale,
No busy steps the grass-grown footway tread,
For all the bloomy flush of life is fled.
All but yon widowed, solitary thing,
That feebly bends beside the plashy spring :
She, wretched matron, forced in age, for bread,
To strip the brook with mantling cresses spread,
To pick her wintry faggot from the thorn,
To seek her nightly shed, and weep till morn ;
She only left of all the harmless train,
The sad historian of the pensive plain.

Ill fares the land, to hastening ills a prey,
Where wealth accumulates, and men decay :
Princes and lords may flourish, or may fade ;
A breath can make them, as a breath has made :
But a bold peasantry, their country's pride,
When once destroyed, can never be supplied.

A time there was, ere England's griefs began,
When every rood of ground maintained its man ;
For him light labour spread her wholesome store,
Just gave what life required, but gave no more :
His best companions, innocence and health ;
And his best riches, ignorance of wealth.

But times are altered ; trade's unfeeling train
Usurp the land and dispossess the swain ;
Along the lawn, where scattered hamlets rose,
Unwieldy wealth and cumbrous pomp repose,
And every want to opulence allied,
And every pang that folly pays to pride.

Those gentle hours that plenty bade to bloom,
Those calm desires that asked but little room,
Those healthful sports that graced the peaceful scene,
Lived in each look, and brightened all the green ;
These, far departing, seek a kinder shore,
And rural mirth and manners are no more.

Sweet Auburn ! parent of the blissful hour,
Thy glades forlorn confess the tyrant's power.
Here, as I take my solitary rounds
Amidst thy tangling walks and ruined grounds,
And, many a year elapsed, return to view
Where once the cottage stood, the hawthorn grew,
Remembrance wakes with all her busy train,
Swells at my breast, and turns the past to pain.

In all my wanderings round this world of care,
In all my griefs—and God has given my share—
I still had hopes, my latest hours to crown,
Amidst these humble bowers to lay me down ;
To husband out life's taper at the close,
And keep the flame from wasting by repose :
I still had hopes, for pride attends us still,
Amidst the swains to show my book-learned skill,
Around my fire an evening group to draw,
And tell of all I felt, and all I saw ;
And, as a hare whom hounds and horns pursue
Pants to the place from whence at first he flew,
I still had hopes, my long vexations past,
Here to return—and die at home at last.

GOLDSMITH.

<i>en-deared</i>	<i>in-flu-ence</i>	<i>innocence</i>
<i>paused (pōzd)</i>	<i>sol-it-ar-y</i>	<i>populátion</i>
<i>sur-veyed'</i>	<i>mould'-er-ing</i>	<i>histórian</i>
<i>guest (gést)</i>	<i>níght-in-gale</i>	<i>ignorance</i>
<i>re-flects</i>	<i>re-mém-brancē</i>	<i>cultivated</i>
<i>whole-some</i>	<i>vex-á-tions</i>	<i>accúmulates</i>

part-ing, departing.

re-mitt-ing, relaxing, given up, stopping for a time. Lat. *re*, "back," and *mitto*, "I send";

I resign, loosen my hold.

pas-time, amusement, play; what serves to *pass time* pleasantly.

sleights (slits), clever tricks.

mis-trust-less, without mistrust or suspicion.

re-spón-sive, answering, replying.

fluc-tü-ate, move up and down, rise and fall, like a wave. Lat. *fluctus*, "a wave."

pén-sive, thoughtful, melancholy, dreary. Lat. *pensum*, "to weigh, think over." The feeling of the onlooker is

transferred to the scene that awakens it.

ill . . . ills. Distinguish the two uses of "ill."

train, what is drawn along; people following. Lat. *traho*, "I draw."

dis-pos-sess, to reverse or remove the fact of possession, to eject. Observe the force of *dis* (Lat. "asunder").

ham-let, a small village, or cluster of houses. Old English *ham*, "a home, village," and *let*, a diminutive suffix.

un-wield'-y, not easily wielded or managed; cumbrous, clumsy.

op-ú-lence, wealth, riches. Lat. *opes*, "wealth."

EXERCISE.—Describe "Sweet Auburn" in prose (1) as "The Loveliest Village of the Plain," and (2) as "The Deserted Village." (Two separate Exercises.)

GREATNESS IN COMMON LIFE.

MY strong interest in the mass of the people is founded, not on their usefulness to the community, so much as on what they are in themselves. Their condition is indeed obscure ; but their importance is not on this account a whit the less. The multitude of men cannot, from the nature of the case, be distinguished ; for the very idea of distinction is—that a man stands out from the multitude. They make little noise and draw little notice in their narrow spheres of action ; but still they have their full proportion of personal worth and even of greatness. Indeed, every man in every condition is great. It is only our own diseased sight which makes him little. A man is great as a man, be he where or what he may. The grandeur of his nature turns to insignificance all outward distinctions. His powers of intellect, of conscience, of love, of knowing God, of perceiving the beautiful, of acting on his own mind, on outward nature, and on his fellow-creatures,—these are glorious prerogatives. Through the vulgar error of undervaluing what is common, we are apt indeed to pass these by as of little worth. But, as in the outward creation, so in the soul, the common is the most precious. Science and art may invent splendid modes of illuminating the apartments of the opulent ; but these are all poor and worthless compared with the common light

which the sun sends into all our windows, which he pours freely, impartially over hill and valley, which kindles daily the eastern and western sky ; and so the common lights of reason, and conscience, and love, are of more worth and dignity than the rare endowments which give celebrity to a few. Let us not disparage that nature which is common to all men ; for no thought can measure its grandeur. It is the image of God, the image even of His infinity, for no limits can be set to its unfolding. He who possesses the divine powers of the soul is a great being, be his place what it may. You may clothe him with rags, may immure him in a dungeon, may chain him to slavish tasks. But he is still great. You may shut him out of your houses ; but God opens to him heavenly mansions. He makes no show indeed in the streets of a splendid city ; but a clear thought, a pure affection, a resolute act of a virtuous will, have a dignity quite of another kind, and far higher than accumulations of brick and granite and plaster and stucco, however cunningly put together, or though stretching far beyond our sight.

Nor is this all. If we pass over this grandeur of our common nature, and turn our thoughts to that comparative greatness, which draws chief attention, and which consists in the decided superiority of the individual to the general standard of power and character, we shall find this as free and frequent a growth among the obscure and unnoticed as in more conspicuous walks of life. The truly great are to be found everywhere, nor is it easy to say in what condition they spring up

most plentifully. Real greatness has nothing to do with a man's sphere. It does not lie in the magnitude of his outward agency, in the extent of the effects which he produces. The greatest men may do comparatively little abroad. Perhaps the greatest in our city at this moment are buried in obscurity. Grandeur of character lies wholly in force of soul, that is, in the force of thought, moral principle, and love, and this may be found in the humblest condition of life. A man brought up to an obscure trade, and hemmed in by the wants of a growing family, may, in his narrow sphere, perceive more clearly, discriminate more keenly, weigh evidence more wisely, seize on the right means more decisively, and have more presence of mind in difficulty, than another who has accumulated vast stores of knowledge by laborious study; and he has more of intellectual greatness. Many a man who has gone but a few miles from home, understands human nature better, detects motives, and weighs character more sagaciously, than another who has travelled over the known world, and made a name by his reports of different countries. It is force of thought which measures intellectual, and so it is force of principle which measures moral, greatness, that highest of human endowments, that brightest manifestation of the Divinity. The greatest man is he who chooses the right with invincible resolution, who resists the sorest temptations from within and without, who bears the heaviest burden cheerfully, who is calmest in storms, and most fearless under menace and frowns, whose reliance on truth, on virtue, on God, is most

unfaltering ; and is this a greatness which is apt to make a show, or which is likely to abound in conspicuous station ? The solemn conflicts of reason with passion ; the victories of moral and religious principle over urgent and almost irresistible solicitations to self-indulgence ; the hardest sacrifices of duty, those of deep-seated affection and of the heart's fondest hopes ; the consolations, hopes, joy, and peace of disappointed, persecuted, scorned, deserted virtue ;—these are of course unseen ; so that the true greatness of human life is almost wholly out of sight. Perhaps in our presence the most heroic deed on earth is done in some silent spirit, the loftiest purpose cherished, the most generous sacrifice made, and we do not suspect it. I believe this greatness to be most common among the multitude, whose names are never heard. Among common people will be found more of hardship borne manfully, more of unvarnished truth, more of religious trust, more of that generosity which gives what the giver needs himself, and more of a wise estimate of life and death, than among the more prosperous.

And even in regard to influence over other beings which is thought the peculiar prerogative of distinguished station, I believe that the difference between the conspicuous and the obscure does not amount to much. Influence is to be measured, not by the extent of surface it covers, but by its *kind*. A man may spread his mind, his feelings, and opinions, through a great extent ; but, if his mind be a low one, he manifests no greatness. A wretched artist may fill a city with daubs,

and by a false showy style achieve a reputation ; but the man of genius, who leaves behind him one grand picture in which immortal beauty is embodied, and which is silently to spread a true taste in his art, exerts an incomparably higher influence. Now the noblest influence on earth is that exerted on character ; and he who puts forth this does a great work, no matter how narrow or obscure his sphere. The father and mother of an unnoticed family, who, in their seclusion, awaken the mind of one child to the idea and love of perfect goodness, who awaken in him a strength of will to repel all temptation, and who send him out prepared to profit by the conflicts of life, surpass in influence a Napoleon breaking the world to his sway. And not only is their work higher in kind ; who knows but that they are doing a greater work even as to extent of surface than the conqueror ? Who knows but that the being whom they inspire with holy and disinterested principles may communicate himself to others ; and that, by a spreading agency, of which they were the silent origin, improvements may spread through a nation, through the world ? In these remarks you will see why I feel and express a deep interest in the obscure in the mass of men. The distinctions of society vanish before the light of these truths. I attach myself to the multitude, not because they are voters and have political power ; but because they are men, and have within their reach the most glorious prizes of humanity.

CHANNING.

<i>in-sig-ni-fic-ance</i>	<i>op-ū-lent</i>	<i>superiority</i>
<i>prē-rdg-a-tive</i>	<i>in-fīn-i-ty</i>	<i>manifestation</i>
<i>un-der-väl-u-ing</i>	<i>temp-ta-tions</i>	<i>sagaciously</i>
<i>im-pār-tial-ly</i>	<i>de-cis-ive-ly</i>	<i>religious</i>
<i>in-dul-gence</i>	<i>ir-re-sist-i-ble</i>	<i>generosity</i>
<i>un-vār-nished</i>	<i>dis-in-ter-est-ed</i>	<i>incomparably</i>

cel-ēb-ri-ty, fame, renown. Lat. *celeber*, “much frequented, much resorted to, famous.”

dis-pār-age, speak slightlyingly of.

im-mūre (-*myūr*), imprison, confine within walls. Lat. *murus*, “a wall.”

dis-crim-in-ate, distinguish, discern or mark differences.

in-vin-ci-ble, unconquerable, not to be overcome. Lat. *in*, “not,” *vinco*, “I conquer,” *ibilis*, “able to be.”

un-fal-ter-ing (-*fōl-*), not faltering, not hesitating or trembling or showing irresolution; determined, firm. *sol-i-cit-ā-tion*, earnest or pressing request, invitation.

THE VILLAGE ALEHOUSE.

NEAR yonder thorn, that lifts its head on high,
 Where once the sign-post caught the passing eye,
 Low lies that house where nut-brown draughts inspired,
 Where grey-beard mirth and smiling toil retired,
 Where village statesmen talked with looks profound,
 And news much older than their ale went round.
 Imagination fondly stoops to trace
 The parlour splendours of that festive place :
 The white-washed wall, the nicely sanded floor,
 The varnished clock that clicked behind the door ;

The chest contrived a double debt to pay,
A bed by night, a chest of drawers by day ;
The pictures placed for ornament and use,
The twelve good rules, the royal game of goose ;



The hearth, except when winter chilled the day,
With aspen boughs and flowers and fennel gay ;
While broken tea-cups, wisely kept for show,
Ranged o'er the chimney, glistened in a row.

Vain transitory splendours ! could not all
 Reprieve the tottering mansion from its fall ?
 Obscure it sinks, nor shall it more impart
 An hour's importance to the poor man's heart.
 Thither no more the peasant shall repair
 To sweet oblivion of his daily care ;
 No more the farmer's news, the barber's tale,
 No more the woodman's ballad shall prevail ;
 No more the smith his dusky brow shall clear,
 Relax his ponderous strength, and lean to hear ;
 The host himself no longer shall be found
 Careful to see the mantling bliss go round ;
 Nor the coy maid, half willing to be prest,
 Shall kiss the cup to pass it to the rest.

GOLDSMITH.

<i>caught</i> (<i>kōt</i>)	<i>dr-na-ment</i>	<i>imagination</i>
<i>draught</i> (<i>drāft</i>)	<i>chim-ney</i>	<i>vārnished</i>
<i>stātes-men</i>	<i>pro-found'</i>	<i>splendours</i>

in-spired, breathed (life, enthusiasm) into (the drinkers).
 Lat. *in*, "into," and *spiro*, "I breathe."
grey-beard mirth smiling toil. The abstract nouns
 "mirth" and "toil" are used
 for the names of the persons
 that were merry and that
 toiled. Collect similar ex-
 amples.

the twelve good rules. Rules for

living a good life, printed,
 framed, and hung up.
Roy'al, good enough for royal
 persons (kings, queens,
 princes, &c.); first-rate,
 capital.

Goose. "A game played with
 dice and a board containing
 sixty-three circles placed so
 as to form something like the
 shape of a goose." (Chambers.)
gay. Arrange in the natural

order the words that "gay" is connected with here.	<i>ob-scure'</i> , unknown, not much known. Lat. <i>obscurus</i> , "dark."
<i>trans-it-or-y</i> , passing away (quickly); the opposite of "permanent" or "enduring." Lat. <i>trans</i> , "beyond," and <i>itum</i> , "to go."	<i>ob-liv-i-on</i> , forgetfulness.
<i>re-prieve'</i> , grant a respite to, preserve from immediate execution or destruction.	<i>pond-er-ous</i> , heavy, weighty, massive. Lat. <i>pondus</i> , "weight."
<i>re-pair'</i> , go to, resort to.	<i>mantling</i> , forming a mantle or cover; here frothing. the mantling <i>bliss</i> . The effect is named instead of the cause. Quote similar examples.

EXERCISE.—*Sketch in your own words (1) the appearance, and (2) the social life of the Village Alehouse.*

WOOL.

IN commerce, the term "wool" is applied to the hair of the alpaca, goat, beaver, and rabbit, and to allied substances; but, strictly speaking, it belongs to the sheep alone, the hair of which, from time immemorial, has been woven into cloth.

Wools are divided into two great classes—clothing wools and combing wools, or short wools and long wools; and the fabrics woven from them are termed woollens or worsteds, according as the one or the other is employed. The fibres of clothing wools felt or interlace with one another, forming thereby a dense compact material, suitable for warm and heavy clothing; these wools are manufactured into broad cloths, narrow cloths, felt for hats, blankets, carpets, serges, flannels, and tartans. Combing wools, on the contrary, though

long in fibre, do not felt, and are therefore employed in the manufacture of light and loose, but still warm garments—such as stuffs, bombazines, merinos, hosiery, camlets, and shawls, and various mixed goods, as damasks, pluses, and velvets.



The Mouflon.

1. THE WOOL OF THE SHEEP.

The wool of the sheep has been greatly improved since the animal has been brought under the fostering

care of man. The *mouflon*, which is considered by some zoologists as the parent stock of the common domestic sheep, inhabits the mountains of Sardinia, Corsica, Greece, Barbary, and Asia Minor. This animal has a very short and coarse fleece, more like hair than wool. When domesticated, the rank hair disappears, and the soft wool round the hair-roots, which is hardly visible in the wild animal, becomes singularly developed. If sheep are left to themselves on downs and moors, there is a tendency to the formation of this hair amongst the wool; its occurrence in the fleece of domestic sheep is therefore rare, and is always regarded as proving defective sheep-farming.

The climate of this country is unfavourable to the growth of the best wools; hence the superiority of the Merino, Saxony, and Australian wools, the produce of countries having a higher average temperature. Merino wool is obtained from the migratory sheep of Spain, a breed distinguished from the British by bearing wool on the forehead and cheeks; the horns are large, ponderous, and convoluted laterally; the wool is long, soft, and twisted into silky-looking spiral ringlets, and is very superior in its fineness and felting properties. Its closeness and a luxuriant supply, from the glands of the skin, of yolk or natural oil which serves to nourish it and mats the fibres together, render it an excellent natural defence against the extremes of heat and cold. These migratory sheep, amounting in Spain to ten millions, are led twice a year (in April and October) a journey of four hundred miles, passing the summer in

the pastures on the slopes of the Pyrenean mountains, and the winter on the plains toward the south.

The word “merino” signifies an overseer of pasture-lands, and is applied to these sheep because, in Spain, they travel in detachments of ten thousand each, under the care of fifty shepherds and as many dogs, with a mayoral or chief shepherd at their head, and have a general right of pasturage all over the kingdom. “Several of the sheep are tamed and taught to obey the signals of the shepherds; these follow the leading shepherd (for there is no driving), and the rest quietly follow them. The flocks travel through the country at the rate of eighteen to twenty miles a day, but, in open country, with good pasturage, more leisurely. Much damage is done to the country over which these immense flocks are passing; the free sheep-walk, which the landed proprietors are forced to keep open, interferes with enclosure and good husbandry: the commons, also, are so completely eaten down that the sheep of the neighbourhood are for a time half starved. The sheep know as well as the shepherds when the procession has arrived at the end of its journey. In April their migratory instinct renders them restless, and, if not guided, they set forth unattended to the cooler hills. In spite of the vigilance of the shepherds, great numbers often escape; if not destroyed by the wolves, there is no danger of losing these stragglers, for they are found in their old pasture, quietly awaiting the arrival of their companions.”

This celebrated breed is now reared in Saxony and

in Australia, which has become one of the principal wool-growing countries in the world. In 1464 Spain imported ewes and rams from the Cotswold Hills.

The Cretan, or Wallachian sheep, remarkable for the enormous development and magnificent formation of its horns, possesses a fleece composed of a soft woolly under-coat, covered with and protected by long drooping hairs. The wool is extremely fine in quality, and is employed in the manufacture of warm cloaks, which are largely used by the peasantry, and which are so thick and warm that they defend the wearer against the bitterest cold.

The chief countries which supply us with sheep and lambs' wools are Russia, Hanse Towns, the Argentine confederation, British possessions, Africa, British India, and above all, Australia.

DR. JOHN YEATS.

<i>al-pdc-a</i>	<i>pàs-tür-age</i>	<i>sìngülarly</i>
<i>in-ter-láce</i>	<i>lei"-sure-ly</i>	<i>superiödity</i>
<i>hós-i-er-y</i>	<i>dom-ést-ic-åt-ed</i>	<i>Australián</i>
<i>míg-ra-tor-y</i>	<i>de-vél-op-ment</i>	<i>luxuriant</i>
<i>lát-er-al-ly</i>	<i>peas'-ant-ry</i>	<i>Pyrenéan</i>
<i>vìg-il-ance (vìj-)</i>	<i>pro-prí-e-tors</i>	<i>confederátion</i>

con-vol-åt-ed (-yåt-), twisted; lit. rolled together, or one part upon another. Lat. *con*, "together," and *volútum*, "to roll."

may'-or-al, chief, head; lit. pertaining to a mayor, or

chief magistrate of a city. Old French *maieur*; from Lat. *major*, "greater." *bom-ba-zine* (-zén), a twilled cloth, made of silk and cotton, or silk and worsted. Grk. *bombyx*, "the silkworm."

2. THE WOOL OF OTHER ANIMALS.

There are other ruminant animals from which the wools of commerce are obtained besides the sheep. The following are the chief of these :—

ANGORA GOAT. It inhabits the mountains in the vicinity of Angora, in Asia Minor. In colour it is milk white ; legs short and black, horns spirally twisted and spreading ; the hair on the whole body is disposed in long, pendulous, spiral ringlets, and is highly valued in Turkey, the finest and most costly Turkish robes being manufactured from the fleece, which is as soft and fine as silk. It was first brought into the markets of Europe under the name of mohair. Its exportation, unless in the shape of yarn, was formerly prohibited, but it is now allowed to be imported unspun. Mohair is transmitted to England chiefly from Smyrna and Constantinople. It is manufactured into fine shawls, camlets, velveteens, pluses, braidings, decorative laces, and trimmings for gentlemen's coats. The manufacture is principally carried on at Bradford and Norwich.

THIBET GOAT. The costly and beautiful Cashmere shawls are made from the delicate downy wool found about the roots of the hair of this animal, which inhabits the high table-lands of Thibet, where these shawls are manufactured. These oriental fabrics are woven by very slow processes, and are therefore very expensive, being sold in Paris at from 4,000 to 10,000 francs a-piece, and in London, at from 100*l.* to 400*l.* The wool is

spun by women, and afterwards coloured. A fine shawl, with a pattern all over it, takes nearly a year in making. The persons employed sit on a bench at the frame—



The Llama.

sometimes four people at each; but if the shawl is a plain one, only two. The borders are worked with wooden needles, there being a separate needle for each

colour, and the rough part of the shawl is uppermost whilst it is in progress of manufacture. To the people of Cashmere this manufacture is very important ; about 16,000 looms are continually at work, each one giving employment to three men. The annual sale there is calculated at 30,000 shawls.

It has long been the aim of European nations, on account of the beauty and value of these shawls, to imitate them, if possible, and apply to their manufacture the more speedy and elaborate methods which modern science has placed within our reach. The French have been most successful, and shawls are now produced at Paris, Lyons, and Nismes, known in commerce as French Cashmere, which closely approximate in stuff and style of work to the oriental, while much lower in price, although still costly. Norwich, Bristol, Paisley, and Edinburgh have also manufactured very good imitations of these shawls. The Cashmere wool imported for this purpose comes into Europe through Kasan, on the eastern bank of the Volga, and also directly from India and Persia.

The quantity of goats' hair or wool imported in 1877 was over ten million lbs., the declared value being about three quarters of a million pounds ; the imports of the same material manufactured were of the value of over 80,000*l.*

ALPACA. The Llamas may be regarded as the camels of South America, to which tribe of animals they belong. They inhabit the slopes of the Peruvian Andes, and the mountains of Chili, keeping together in herds of from



The Vicuña

100 to 200, and never drinking when they have a sufficiency of green herbage. The alpaca is about the size of a full-grown deer, and very graceful in appearance. Its fleece is superior to that of the sheep in length and softness, spins easily, and yields an even, strong, and true thread. Pizarro found this animal used as a beast of burden, and its wool employed for clothing, by the natives of that country.

Alpaca wool arrives in this country in small bales called ballots, weighing about 70 lbs., and generally in a very dirty state. It is sorted into eight different varieties, each fitted for a particular class of goods, and then washed and combed by machinery. The principal articles manufactured from it consist of alpaca lustres, fancy alpacas, and alpaca mixtures. Nearly all the alpaca wool imported into England is worked up in the Bradford district.

The *Llama vicuña* and *Llama guanaco*, other species of these animals inhabiting the same region, yield fine hair, but at present of little commercial value.

In 1879 we imported 417 million lbs. of wool (sheep, lamb, alpaca, and the llama tribe), valued at over $23\frac{1}{2}$ million pounds, from Europe, South America, South Africa, the East Indies, and Australia. Our exports of wool in 1879, to foreign countries and our colonial possessions, amounted to nearly $15\frac{3}{4}$ million lbs. of sheep and lambs' wool, over $33\frac{1}{2}$ million lbs. of woollen and worsted yarn, and over 250 million yards of woollen and worsted manufactures—cloths, coatings, worsted stuffs, blankets,

flannels, carpets, and so forth; the whole of these woollen exports, the produce of the United Kingdom, in 1879, being valued at some 20½ million pounds sterling.

Although Europe now surpasses oriental nations in the artistic working of cotton and silk, yet the same cannot be said of the manufacture of shawls and carpets; for, besides the cashmere shawls made at Kashmir, in the kingdom of Lahore, in Thibet, and also at Delhi in British India, carpets of peculiar and unequalled beauty still come exclusively from Persia and the Levant.

DR. J. YEATS (adapted).

“Natural History of Commerce” (Virtue & Co.).

<i>An-gó-ra</i>	<i>prín-cip-al-ly</i>	<i>exportation</i>
<i>spir-al-ly</i>	<i>suf-fl-ci-en-cy</i>	<i>calculated</i>
<i>ex-péns-ive</i>	<i>pró-cess-es</i>	<i>imitations</i>
<i>em-ploy'-ment</i>	<i>suc-céss-ful</i>	<i>varieties</i>
<i>sci-ence</i>	<i>är-tist-ic</i>	<i>machinery (-én-)</i>
<i>weigh'-ing</i>	<i>un-é-qualled</i>	<i>commercial</i>

rú-min-ant, bringing up from the throat or gullet (Lat. *rumen*, “the gullet”), chewing over again, chewing the cud.

vi-cin-i-ty, neighbourhood. Lat. *vicinus*, neighbouring, belonging to the same *vicus* (“quarter” (of a town), “village,” &c.).

pénd-ül-ous (-yül-), hanging loose. Lat. *pendeo*, “I hang.”

mó-hair, French *moire*, the hair of the Angora goat, or cloth made of it.

pro-hib-it-ed, forbidden, ordered not to be. Lat. *prohibitum*, “to forbid or hold back,”

from *pro*, “forth, forward,” and *habeo*, “I have or hold.”

trans-mitt-ed, sent across. Lat. *trans*, “over, across,” and *mitto*, “I send.”

Con-stan-tin-ó-ple, capital of

Turkey, "Constantine's city." (Grk. *polis*, "a city.") Formerly called Byzantium; rebuilt by the Roman Emperor, Constantine the Great, in A.D. 328—330, and called by his name.

déc-or-á-tive, adorning, suited to adorn. Lat. *decoratum*, "to ornament," from *decurus*, "ornament, what is fitting or proper."

or-i-ent-al, of the East; belonging to, made in, or coming from, the East. Lat. *Oriens*, lit. "rising"; hence, the East,

the quarter where the sun rises.

ē-lab-or-ate, highly finished; wrought out with labour,—fully and exactly. Lat. *e*, "out," intensive, and *laboratum*, "to labour," from *labor*.

ap-pròx-im-ate, come near to, approach. Lat. *ap (ad)*, "to," and *proximus*, "nearest."

ex-clus-ive-ly, solely; so as to exclude all others. From Persia and the Levant "and from no other countries." Lat. *ex*, "out," and *clausum*, "to shut."

CHILDREN OF THE SUN.

WHERE HEAT, LIGHT, AND FORCE COME FROM.

YOU have heard a story to the effect that George Stephenson, when looking at the flame of a candle, said, "That light and that heat which the candle gives off are really the heat and light of the sun which shone ages ago." Now that is true; but it is rather a difficult thing to understand. It is rather difficult to understand that we are here being illuminated by sun-light; we usually call it Manchester gas-light; but nevertheless it is sun-light and heat that shone perhaps millions of years ago.

I will tell you another story of George Stephenson, which may help us to understand the first one. George Stephenson and a friend were once looking at a train which was rushing along ; the trains in those days were not so common as they are now ; and George asked his friend what he thought propelled or drove the train along. His friend answered, "Probably the arm of some stalwart, north-country driver." "No," said George, "it is the heat and light of the sun which shone millions of years ago, which has been bottled up in the coal all this time, and is now driving that train." What did he mean ? Can we get an idea whether that extraordinary statement is true—that it is really the heat and light of the sun which is driving the train ? I want to try and make that plain to you.

What is the coal that we put under the steam-engine ? I have already described to you the amount of heat and mechanical motion which we get from a pound of coal. I told you that a pound of coal, if we could convert the whole of the heat which it is capable of producing into mechanical power, would jump up two thousand miles high. Now where did that coal come from ? What has that coal been ? These are questions which we all may ask ourselves. The coal really was at one time a living plant ; the coal, or the constituents of the coal, composed a living plant that grew in the bright sun-shine on the surface of this earth, not buried as it is now, below a thousand feet of rock, but living in and enjoying the bright sun-shine, as the trees now-a-days do when the sun shines

here. Well, how did these coal plants grow? They grew, as all plants only can grow, by the sun-shine. If we take away the sun-shine, plants cannot flourish. You cannot grow plants in a cellar, because there is no sun-shine. Put plants in a window, and see how they creep up to the light; that is because the light is absolutely necessary for their growth; they cannot grow without the sun-light. So our coal plant could not grow without the sun-light. Remember it is the sun-light which enables it to take its food, namely, the carbon, from the air, by decomposing the carbonic acid which the air contains. This it can only do by the help of the sun-light. Now a certain definite amount of light and heat must shine upon the plant before it can gain one pound in weight; before one pound of the stem, or leaf, or branch of that plant can be formed. A certain definite amount of force, as light and heat, must shine upon the plant, and be used up in decomposing the carbonic acid of the air. What happens if we burn a plant? Why, that definite amount of force as light and heat comes out again, and we get absolutely the same amount of heat out of a piece of coal when burnt as was necessarily used up years ago in order that that coal should be formed. Now I hope that you are able to get some idea of the truth of that statement of George Stephenson's, that the light and the heat of the sun which shone so many years ago, and was used up in the growth of the plant, has lain hidden in the coal until it is burnt, when it again comes out and is rendered visible. It does not matter whether we burn

the coal or the candle or the gas, for they are all the same thing—all were produced by the heat and light of the sun, and now when they return to their original form of carbonic acid, they give out exactly the same amount of force as light and heat as was originally needed to make them.

Let us now ask ourselves, “How do *we* live, each one of us, on this earth?” What is it that keeps us alive? Certainly, it is the food we eat. We, like the steam-engine, need fuel, though not coal, to be poured into us, in order that we may be able to live and act and move, to use our muscles and effect mechanical work. We must eat, and it is by the burning of this food in our bodies that we are enabled to exert mechanical force. You may say, “It is a curious thing, if we men are like candles, that we are actually undergoing combustion, that we are actually burning.” Yet, nevertheless, such is the fact. I showed you on a former occasion what happens when a candle is burnt; I showed you that carbonic acid is formed, as was shown by the lime-water becoming milky; and now, if I were to show you the burning of a bit of charcoal in oxygen, you would see that the same thing goes on as when the candle is burnt. The same kind of action, as far as the chemistry of it is concerned, goes on inside our bodies. You may say, “We don’t burn.” It is true that you do not see the same sparkling, but every person is hotter than the surrounding atmosphere, and the action which goes on is of the same kind; it is a combination of the carbon

of the food in the body with the oxygen of the air, when carbonic acid is formed, part of which in man and animals is converted into heat, and part into mechanical motion. Part of the dinner which I ate not very long ago is now being converted into muscular force, enabling me to talk to you in this large room ; and therefore I am here actually converting heat into mechanical action, just exactly as the steam-engine does when it takes you along the rails. Every animal really acts in a similar manner to a steam-engine, but man is a much more perfect instrument than the steam-engine, and a man can get more mechanical force out of himself for the amount of food he consumes, and the amount of heat evolved by the consumption of that food, than is possible in the case of the steam-engine. That I am really producing the same substance produced here by the burning of the charcoal, I can easily show you by a simple experiment. If I take this clear lime-water and blow into it, you will see it becomes milky. Very well, I have blown enough air into the lime-water from my lungs to show that it is quite white. So that really an animal does the same thing as a machine, it converts heat into mechanical action.

You will now ask, I expect—"Whence do we derive this source of power?" We derive it immediately from our food. If we were not to eat we should not be able to effect this mechanical action ; we should starve, become cold, and die. But let us ask ourselves, "Where does this store of energy in our food come from?" It comes ultimately from the sun, because

we eat either animal food or vegetable food ; we derive from that food the force which we need, and that food derives its pent-up energy from the sun, because no animals can live without vegetables ; and in the second place, because no vegetables can live without the sun. It is the sun-light which keeps the vegetables alive, and it is by the destruction of vegetables that animals live. This is a subject which requires a great deal of thought, and probably more explanation than I can possibly give this evening.

So much, then, for the source of energy in animals and plants. Remember we are all children of the sun. If the sun had never shone, we, as we are now, could never have lived. PROFESSOR HENRY E. ROSCOE.

*(Manchester Science Lectures for the People.
With permission of the Author and Mr. Heywood.)*

millions	illuminated	extraordinary
definite	constituents	mechanical
carbonic	decomposing	absolutely
concerned	combustion	originally
energy	chemistry	actually
atmosphere	consumption	combination

George Stephenson, a great English engineer, the inventor of the locomotive engine. Lived 1781—1848.

pro-pèl, drive on. Lat. *pro*, “forth, forward,” and *pello*, “I drive.”

stal'-wart (*stōl-*), sturdy, big and strong.

e-vòlved, developed, produced. Lat. *e*, “out,” and *volvo*, “I roll.”

úl-tim-ate-ly, in the last resort, at last, in the end. Lat. *ultimus*, “last.”

COLUMBUS.

HEROIC guide ! whose wings are never furl'd,
 By thee Spain's voyager sought another world.
 What but poetic impulse could sustain
 That dauntless pilgrim on the dreary main ?
 Day after day his mariners protest,
 And gaze with dread along the pathless waste.
 Beyond that realm of waves untracked before,
 Thy fairy pencil traced the promised shore ;
 Through weary storms and faction's fiercer rage,
 The scoffs of ingrates and the chills of age,
 Thy voice renewed his earnestness of aim,
 And whispered pledges of eternal fame ;
 Thy cheering smile atoned for fortune's frown,
 And made his fetters garlands of renown.

HENRY T. TUCKERMAN.

he-ro-ic

im-pulse

voy'ager

po-èt-ic

in-grates

mariners

daunt'-less

pilgrim

untracked

gär-lands

re-nown'

earn'estness



THE RETURN OF COLUMBUS.

1. ARRIVAL AT PALOS.

IN the spring of 1493, while the court was still at Barcelona, letters were received from Christopher Columbus, announcing his return to Spain, and the successful achievement of his great enterprise, by the discovery of land beyond the western ocean. The delight and astonishment raised by this intelligence were proportioned to the scepticism with which his project had been originally viewed. The sovereigns were now filled with a natural impatience to ascertain the extent and other particulars of the important discovery ; and they transmitted instant instructions to the admiral to repair to Barcelona as soon as he should have made the preliminary arrangements for the further prosecution of his enterprise.

The great navigator had succeeded, as is well known, after a voyage the natural difficulties of which had been much augmented by the distrust and mutinous spirit of his followers, in descrying land, on Friday, the 12th of October, 1492. After some months spent in exploring the delightful regions now for the first time thrown open to the eyes of a European, he embarked in the month of January, 1493, for Spain. One of his vessels had previously foundered, and another had deserted him ; so that he was left alone to retrace his course across the Atlantic.

After a most tempestuous voyage, he was compelled to take shelter in the Tagus, sorely against his inclination. He experienced, however, the most honourable reception from the Portuguese monarch, John the Second, who did ample justice to the great qualities of Columbus, although he had failed to profit by them. After a brief delay the admiral resumed his voyage, and crossing the bar of Saltes entered the harbour of Palos about noon on the 15th of March, 1493,—being exactly seven months and eleven days since his departure from that port.

Great was the agitation in the little community of Palos, as they beheld the well-known vessel of the admiral re-entering their harbour. Their desponding imaginations had long since consigned him to a watery grave; for, in addition to the preternatural horrors which hung over the voyage, they had experienced the most stormy and disastrous winter within the recollection of the oldest mariners. Most of them had relatives or friends on board. They thronged immediately to the shore, to assure themselves with their own eyes of the truth of their return.

When they beheld their faces once more, and saw them accompanied by the numerous evidences which they brought back of the success of the expedition, they burst forth in acclamations of joy and gratulation. They awaited the landing of Columbus, when the whole population of the place accompanied him and his crew to the principal church, where solemn thanksgivings were offered up for their return, while every bell in the

village sent forth a joyous peal in honour of the glorious event.

pro-por-tioned
im-pa-tience
pré-vi-ous-ly
trans-mitt-ed
acclamá-tions
gratulá-tion

món-arch (-ärk)
àd-mir-al
dis-as-trous
agitá-tion
commú-nity
expedition

prosecú-tion
nàrigåtor
tempestuous
inclination
expérienced
Portuguese

Christopher Columbus is supposed to have been born, of humble parents, at Genoa, in 1436 (or 1446). He died at Valladolid in 1506.

a-chievé-ment (-chév-), accomplishment, carrying out, especially after long and great labour. French, *achever*, "to finish, to perfect," from Lat. *ad*, "to," and *caput*, "the head" (French, *chef*).

én-ter-prise, undertaking ; a bold and difficult attempt.

scép-ti-cism, doubt, unbelief. Greek, *skeptomai*, "I look at carefully, consider, think over."

as-cer-tain', to establish as certain, to know, learn. Lat. *as* (*ad*) "to," *certus*, "certain, sure."

pre-lím-in-ar-y, preparatory, necessary as first steps. Lat. *præ*, "before," and *limen*,

"the threshold" ; "before proceeding to the main business."

aug-mént-ed, increased, made greater. Lat. *augeo*, "I increase."

mul-tin-ous (myú-), disposed to mutiny ; rebellious, opposed to discipline.

found'-ered, filled with water and sunk.

he had failed to profit by them. Columbus had laid his plans before him and asked his help ; but John II. sent out other navigators to test their value. These failed ; and Columbus turned away from Lisbon in disgust.

re-sumed', took up again, proceeded on. Lat. *re*, "again," and *sumo*, "I take."

de-spón-d-ing, despairing ; losing courage, spirit, hope ; cast down. Lat. *de*, "down," and

spondeo, "I promise"; "ceasing to promise, or giving up (courage or hope)."

con-signed (-*sind*), committed, delivered over. Lat. *con*, "together," and *signare*, "to sign or seal."

pré-ter-nát-ür-al, beyond what is natural; raised up by superstitious fancies. Lat.

præter, beyond," and *natura*, "nature."

which hung over the voyage; within the recollection of the oldest mariners. Express in shorter forms.

Most of them . . . joy and gratulation. The pronoun "they" is applied in reference to different parties; suggest changes to obviate this.

2. ARRIVAL AT BARCELONA.

THE admiral was too desirous of presenting himself before the sovereigns to protract his stay long at Palos. He took with him on his journey specimens of the multifarious products of the newly-discovered regions. He was accompanied by several of the native islanders, arrayed in their simple barbaric costume, and decorated, as he passed through the principal cities, with collars, bracelets, and other ornaments of gold, rudely fashioned. He exhibited also considerable quantities of the same metal in dust or in crude masses, numerous vegetable exotics possessed of aromatic or medicinal virtue, and several kinds of quadrupeds unknown in Europe, and birds whose varieties of gaudy plumage gave a brilliant effect to the pageant.

The admiral's progress through the country was everywhere impeded by the multitudes thronging forth to gaze at the extraordinary spectacle, and the more extraordinary man, who, in the emphatic language of that

time—which has now lost its force from its familiarity—first revealed the existence of a “NEW WORLD.” As he passed through the busy, populous city of Seville, every window, balcony, and house-top, which could afford a glimpse of him, is described to have been crowded with spectators.

It was the middle of April before Columbus reached Barcelona. The nobility and cavaliers in attendance on the court, together with the authorities of the city, came to the gates to receive him, and escorted him to the royal presence. Ferdinand and Isabella were seated, with their son Prince John, under a superb canopy of state, awaiting his arrival. On his approach, they rose from their seats, and extending their hands to him to salute, caused him to be seated before them. These were unprecedented marks of condescension to a person of Columbus’ rank in the haughty and ceremonious court of Castile.

It was, indeed, the proudest moment in the life of Columbus. He had fully established the truth of his long-contested theory, in the face of argument, sophistry, sneer, scepticism, and contempt. He had achieved this not by chance, but by calculation, supported through the most adverse circumstances by consummate conduct. The honours paid him, which had hitherto been reserved only for rank, or fortune, or military success purchased by the blood and tears of thousands, were, in his case, a homage to intellectual power successfully exerted in behalf of the noblest interests of humanity.

After a brief interval, the sovereigns requested from Columbus a recital of his adventures. His manner was sedate and dignified, but warmed by the glow of natural enthusiasm. He enumerated the several islands which



he had visited, expatiated on the temperate character of the climate, and the capacity of the soil for every variety of agricultural production, appealing to the samples imported by him as evidence of their natural fruitfulness.

He dwelt more at large on the precious metals to be found in these islands, which he inferred less from the specimens actually obtained, than from the uniform testimony of the natives to their abundance in the unexplored regions of the interior. Lastly, he pointed out the wide scope afforded to Christian zeal in the illumination of a race of men whose minds, far from being wedded to any system of idolatry, were prepared by their extreme simplicity for the reception of pure and uncorrupted doctrine.

The last consideration touched Isabella's heart most sensibly ; and the whole audience, kindled with various emotions by the speaker's eloquence, filled up the perspective with the gorgeous colouring of their own fancies, as ambition, or avarice, or devotional feeling predominated in their bosoms. When Columbus ceased, the king and queen, together with all present, prostrated themselves on their knees in grateful thanksgivings, while the solemn strains of the *Te Deum* were poured forth by the choir of the royal chapel, as in commemoration of some glorious victory.

W. H. PRESCOTT.

<i>desirous</i>	<i>sovereigns</i>	<i>decorated</i>
<i>quad'rupeds</i>	<i>specimens</i>	<i>medicinal</i>
<i>pågeant</i>	<i>authorities</i>	<i>familiarity</i>
<i>balcony</i>	<i>canopy</i>	<i>enthúsiasm</i>
<i>ceremónious</i>	<i>humanity</i>	<i>agricultural</i>
<i>intellectual</i>	<i>dignified</i>	<i>illumination</i>

pro-tract, draw out, extend.

Lat. *pro*, "forth," and *tractum*, "to draw."

mul-ti-fár-i-ous, of many sorts, or varieties.

crude, raw, unprepared; not manufactured.

ex-ót-ics, foreign (plants, shrubs, trees); introduced from another country. Grk. *exo*, "outside." The opposite is "indigenous" (home-grown).

aromátic, having aróma or sweet smell; fragrant.

im-péd-ed, delayed, hindered.

Lat. *impedio*, from *im* (*in*), "into," and *pedes*, "feet"; literally, "to entangle one's feet."

em-phát-ic, forcible, expressive.

un-pré-ced-ént-ed, without precedent or example; not preceded by any similar marks; there had never been the like of them.

con-de-scén-sion, coming down, stooping, from a higher rank; courtesy, done to an inferior as if an equal. Lat. *con*, "together," and *descendere*, "to

come down" (from *de*, "down," and *scandere*, "to climb").

haught'y, lofty, proud. French, *haut*, from Lat. *altus*, "high."

sóph-ist-ry, reasoning, apparently sound, but really unsound; specious argument.

con-sum-mate, or *con-sim-mate*, finished, perfect, of the highest excellence. Lat. *con*, "together," and *summa*, "the summit, highest point."

expátiated (*ex-pá-shi-ät-ed*), broadened out, enlarged, spoke freely and fully. Lat. *ex*, "out," and *spatior*, "I wander or walk about," from *spatium*, "space, room."

which he inferred. What does "which" refer to? What did he infer?

íddolatry, worship of idols, or images. Greek, *eídolon*, "an image," and *latreia*, "service."

pre-dóm-in-ät-ed, prevailed, was strongest, had most influence. Lat. *præ*, "before," and *dominor*, "I rule" (from *dominus*, "lord and master").





CAUGHT A TARTAR.

IN the afternoon I arranged my tackle, and strolled down to the pool to fish. There was a difficulty in procuring bait; a worm was never heard of in the burning deserts of Nubia, neither had I a net to catch small fish; I was therefore obliged to bait with pieces of hippopotamus. Fishing in such a pool as that of the Atbara was sufficiently exciting, as it was impossible

to speculate upon what creature might accept the invitation; but the Arabs who accompanied me were particular in guarding me against the position I had taken under a willow-bush close to the water, as they explained, that most probably a crocodile would take me instead of the bait; they declared that accidents had frequently happened when people had sat upon the bank either to drink with their hands, or even while watching their goats. I accordingly fished at a few feet distant from the margin, and presently I had a bite; I landed a species of perch about two pounds' weight; this was the "boulti," one of the best Nile fish, mentioned by the traveller Bruce. In a short time I had caught a respectable dish of fish, but hitherto no monster had paid me the slightest attention; accordingly I changed my bait, and upon a powerful hook, fitted upon treble-twisted wire, I fastened an enticing strip of a boulti. The bait was about four ounces, and glistened like silver; the water was tolerably clear, but not too bright, and with such an attraction I expected something heavy. My float was a large-sized pike-float for live bait, and this civilised sign had been only a few minutes in the wild waters of the Atbara, when bob! and away it went! I had a very large reel, with nearly three hundred yards of line that had been specially made for monsters; down went the top of my rod, as though a grindstone was suspended on it, and, as I recovered its position, away went the line, and the reel revolved, not with the sudden dash of a spirited fish, but with the steady determined pull of a trotting

horse. What on earth have I got hold of? In a few minutes about a hundred yards of line were out, and as the creature was steadily but slowly travelling down the centre of the channel, I determined to cry "halt!" if possible, as my tackle was extremely strong, and my rod was a single bamboo. Accordingly, I put on a powerful strain, which was replied to by a sullen tug, a shake, and again my rod was pulled suddenly down to the water's edge. At length after the roughest handling, I began to reel in slack line as my unknown friend had doubled in upon me; and upon once more putting severe pressure upon him or her, as it might be, I perceived a great swirl in the water about twenty yards from the rod. The tackle would bear anything, and I strained so heavily upon my adversary, that I soon reduced our distance; but the water was exceedingly deep, the bank precipitous, and he was still invisible. At length, after much tugging and counter-tugging, he began to show; eagerly I gazed into the water to examine my new acquaintance, when I made out something below, in shape between a coach-wheel and a sponging-bath; in a few moments more I brought to the surface an enormous turtle, well hooked. I felt like the old lady who won an elephant in a lottery: that I had him was certain, but what was I to do with my prize? It was at the least a hundred pounds' weight, and the bank was steep and covered with bushes; thus it was impossible to land the monster, that now tugged and dived with the determination of the grindstone that his first pull had suggested. Once I attempted the gaff, but the

trusty weapon that had landed many a fish in Scotland broke in the hard shell of the turtle, and I was helpless. My Arab now came to my assistance, and at once terminated the struggle. Seizing the line with both hands, utterly regardless of all remonstrance (which, being in English, he did not understand), he quickly hauled our turtle to the surface, and held it, struggling and gnashing its jaws, close to the steep bank. In a few moments the line slackened, and the turtle disappeared. The fight was over! The sharp horny jaws had bitten through treble-twisted brass wire as clean as though cut by shears. My visions of turtle soup had faded.

SIR SAMUEL W. BAKER.

<i>ar-ranged</i>	<i>tolerably</i>	<i>guarding</i>
<i>in-vit-á-tion</i>	<i>attrdction</i>	<i>expected</i>
<i>crdc-o-dile</i>	<i>civilised</i>	<i>chànnel</i>
<i>dc-cid-ents</i>	<i>recov'ered</i>	<i>pressure</i>
<i>ac-quaint'-ance</i>	<i>precipitous</i>	<i>endrmous</i>

hip-po-pòt-a-mus, river horse; a large animal, like a horse or an elephant; that lives in the Nile and other African rivers. Greek, *hippos*, "a horse," and *potamos*, "a river."

Atbara, tributary of the Nile (right bank), from Abyssinia.

ex-cit-ing, stirring, moving.

spèc-ul-ate (-yùl-), imagine, guess.

mär-gin, edge, brink.

sus-pènd-ed, hung.

re-vòlved, rolled or turned

round. Lat. *re*, "back," and *volvo*, "I roll."

ad-vers-ar-y, opponent. Lat. *adversarius*, from *adversus*, "opposite, against," from *ad*, "to," and *versus*, "turned."

as-sist-ance, aid, help.

re-gàrd-less, careless, paying no heed to.

re-mòn-strance, showing strong reasons against an action or a proposal. Lat. *re*, "back again," and *monstro*, "I show, or point out."



THE THREE FISHERS.

THREE fishers went sailing away to the west,
 Away to the west as the sun went down ;
Each thought on the woman who loved him best,
 And the children stood watching them out of the town ;
For men must work, and women must weep,
 And there's little to earn, and many to keep,
Though the harbour bar be moaning.

Three wives sat up in the lighthouse tower,
And they trimm'd the lamps as the sun went down ;
They looked at the squall, and they look'd at the shower,
And the night-rack came rolling up ragged and brown.
But men must work and women must weep,
Though storms be sudden, and waters deep,
And the harbour bar be moaning.

Three corpses lay out on the shining sands
In the morning gleam as the tide went down,
And the women are weeping and wringing their hands
For those who will never come home to the town ;
For men must work and women must weep,
And the sooner 'tis over, the sooner to sleep,
And good-bye to the bar and its moaning.

CHARLES KINGSLEY.

A RHINOCEROS HUNT.

LADEN with our collection of gum-arabic, we were leisurely returning home through alternate plains and low open forest of mimosa, when Taher Sheriff, who was leading the party, suddenly reined up his horse, and pointed to a thick bush, beneath which was a large grey, but shapeless, mass. He whispered, as I drew near, "Oom gurrin" (mother of the horn), their name for the rhinoceros. I immediately dismounted, and discovered two rhinoceros asleep beneath a thick mass

of bushes ; they were lying like pigs, close together, so curiously, that it was useless to attempt a shot. In their happy dreams they must have been suddenly disturbed by the scent of an enemy, for, without the least warning, they suddenly sprang to their feet with astonishing quickness, and with a loud and sharp whiff, whiff, whiff ! one of them charged straight at me. I fired my right-hand barrel in his throat, as it was useless to aim at the head protected by two horns at the nose. This turned him, but had no other effect, and the two animals thundered off together at a tremendous pace.

Now for a "tally ho !" Our stock of gum was scattered on the ground, and away went the aggaeers in full speed after the two rhinoceros. Without waiting to reload, I quickly remounted my horse Tétel, and, with Suleiman in company, I spurred hard to overtake the flying Arabs.

Here was a sight to drive a hunter wild ! The two rhinoceros were running neck and neck, like a pair of horses in harness, but bounding along at tremendous speed within ten yards of the leading Hamran. This was Taher Sheriff, who, with his sword drawn, and his long hair flying wildly behind him, urged his horse forward in the race, amidst a cloud of dust raised by the two huge but active beasts, that tried every sinew of the horses. Roder Sheriff, with the withered arm, was second ; with the reins hung upon the hawk-like claw that was all that remained of a hand, but with his naked sword grasped in his right, he kept close to his brother, ready to second his blow. Abou Do was third ;

his hair flying in the wind—his heels dashing against the flanks of his horse, to which he shouted in his excitement to urge him to the front, while he leant forward with his long sword, in the wild energy of the moment, as though hoping to reach the game against all possibility. Now for the spurs! and as these, vigorously applied, screwed an extra stride out of Tétel, I soon found myself in the ruck of men, horses, and drawn swords. There were seven of us,—and passing Abou Do, whose face wore an expression of agony at finding that his horse was failing, I quickly obtained a place between the two brothers, Taher and Roder Sheriff. There had been a jealousy between the two parties of aggaeers, and each was striving to outdo the other; thus Abou Do was driven almost to madness at the superiority of Taher's horse, while the latter, who was the renowned hunter of the tribe, was determined that his sword should be the first to taste blood. I tried to pass the rhinoceros on my left, so as to fire close into the shoulder my remaining barrel with my right hand, but it was impossible to overtake the animals, who bounded along with undiminished speed. With the greatest exertion of men and horses we could only retain our position within about three or four yards of their tails—just out of reach of the swords.

The only chance in the race was to hold the pace until the rhinoceros should begin to flag. The horses were pressed to the utmost; but we had already run about two miles, and the game showed no signs of giving in. On they flew—sometimes over open ground, then

through low bush, which tried the horses severely ; then through strips of open forest, until at length the party began to tail off, and only a select few kept their places. We arrived at the summit of a ridge, from which the ground sloped in a gentle inclination for about a mile towards the river ; at the foot of this incline was thick thorny nabbuk jungle, for which impenetrable covert the rhinoceros pressed at their utmost speed. Never was there better ground for the finish of a race ; the earth was sandy, but firm, and as we saw the winning-post in the jungle that must terminate the hunt, we redoubled our exertions to close with the unflagging game. Suleiman's horse gave in —we had been for about twenty minutes at a killing pace. Tétel, although not a fast horse, was good for a distance, and he now proved his power of endurance, as I was riding at least two stone heavier than any of the party. Only four of the seven remained ; and we swept down the incline, Taher Sheriff still leading, and Abou Do the last ! His horse was done, but not the rider ; for, springing to the ground while at full speed, sword in hand, he forsook his tired horse, and, preferring his own legs, he ran like an antelope, and, for the first hundred yards, I thought he would really pass us, and win the honour of first blow. It was of no use, the pace was too severe, and, although running wonderfully, he was obliged to give way to the horses. Only three now followed the rhinoceros—Taher Sheriff, his brother Roder, and myself. I had been obliged to give the second place to Roder, as he was a mere monkey

in weight; but I was a close third. The excitement was intense—we neared the jungle, and the rhinoceros began to show signs of flagging, as the dust puffed up before their nostrils, and, with noses close to the ground, they snorted as they still galloped on. O for a fresh horse! “A horse! a horse! my kingdom for a horse!” We were within two hundred yards of the jungle; but the horses were all done. Tétel reeled as I urged him forward, Roder pushed ahead; we were close to the dense thorns, and the rhinoceros broke into a trot; they were done! “Now, Taher, for-r-a-a-r-r-d! for-r-r-a-a-r-d, Taher!!!” Away he went—he was close to the very heels of the beasts; but his horse could do no more than his present pace; still he gained upon the nearest; he leaned forward with his sword raised for the blow—another moment, and the jungle would be reached! One effort more, and the sword flashed in the sunshine, as the rearmost rhinoceros disappeared in the thick screen of thorns, with a gash about a foot long upon his hind-quarters. Taher Sheriff shook his bloody sword in triumph above his head; but the rhinoceros was gone. We were fairly beaten, regularly outpaced; but I believe another two hundred yards would have given us the victory. “Bravo, Taher!” I shouted. He had ridden splendidly, and his blow had been marvellously delivered at an extremely long reach, as he was nearly out of his saddle when he sprang forward to enable the blade to obtain a cut at the last moment. He could not reach the ham-string, as his horse could not gain the proper position.

We all immediately dismounted; the horses were thoroughly done, and I at once loosened the girths and contemplated my steed Tétel, who with head lowered, and legs wide apart, was a tolerable example of the effects of pace. The other aggaeers shortly arrived, and as the rival Abou Do joined us, Taher Sheriff quietly wiped the blood off his sword without making a remark; this was a bitter moment for the discomfited Abou Do.

Although we had failed, I never enjoyed a hunt so much either before or since; it was a *magnificent* run.

SIR SAMUEL W. BAKER.

mó-mó-sa, a genus of leguminous plants (pod-bearing, like beans and peas).

rhín-ó-cer-os (*rín-*). Grk. *rhis*, (*rhinos*), "the nose," and *keras*, "a horn"; from the one or two solid fibrous horns that arm the animal's

snout. Observe that the same form is used here for both singular and plural.

ag-ga-geer (-jér), a Hamran Arab who hunts all sorts of wild animals with no other weapon than the sword.

TO BLOSSOMS.

FAIR pledges of a fruitful tree,
 Why do ye fall so fast?
 Your date is not so past
 But you may stay yet here a while
 To blush and gently smile,
 And go at last.

What, were ye born to be
An hour or half's delight,
And so to bid good-night?
'Twas pity Nature brought ye forth
Merely to show your worth,
And lose you quite.

But you are lovely leaves, where we
May read how soon things have
Their end, though ne'er so brave:
And after they have shown their pride
Like you a while, they glide
Into the grave.

HERRICK.

END OF BOOK V.

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